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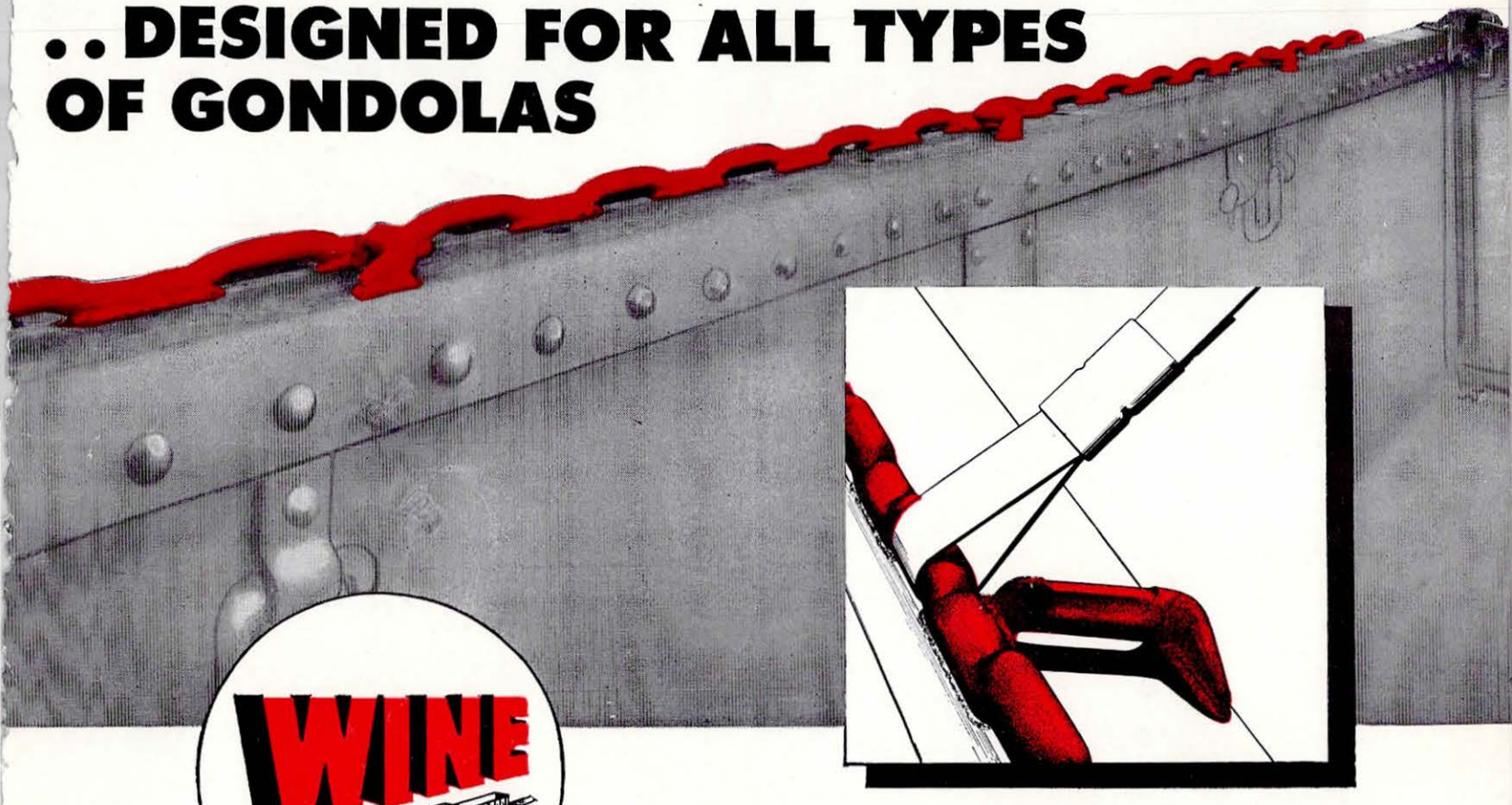

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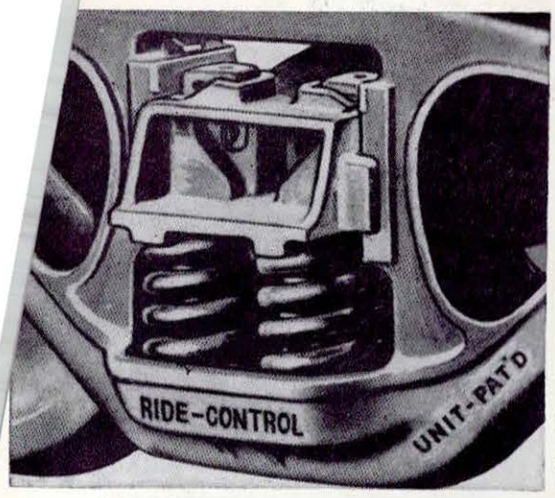

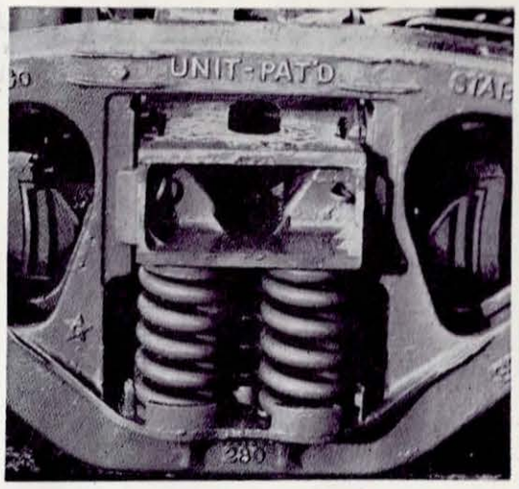

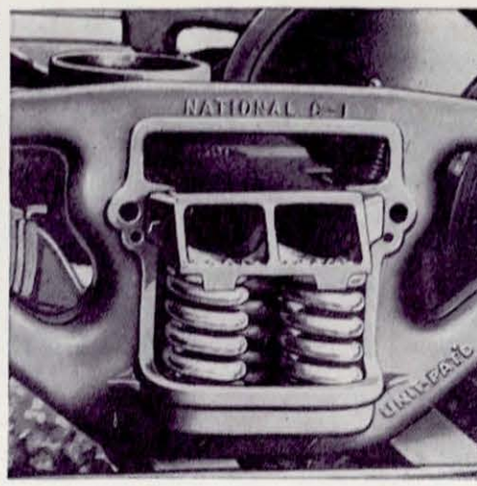

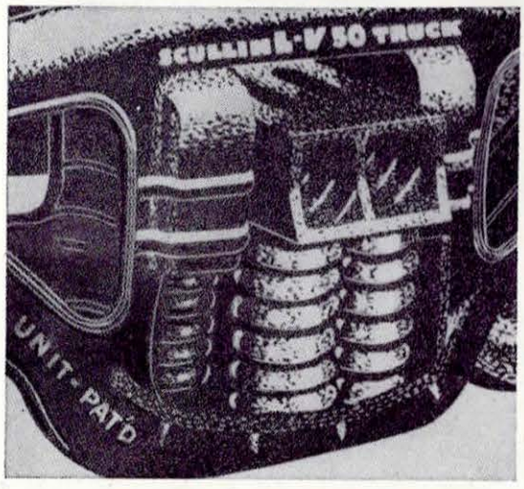

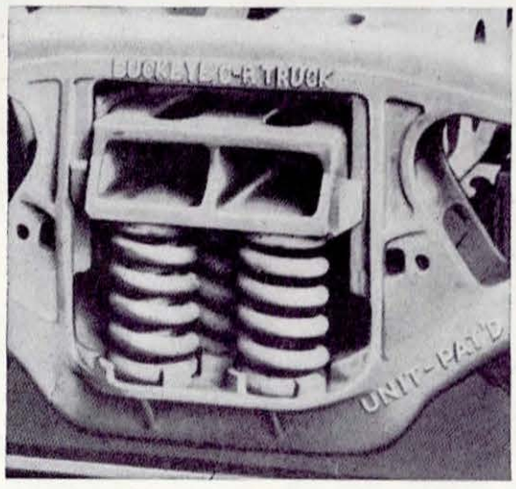

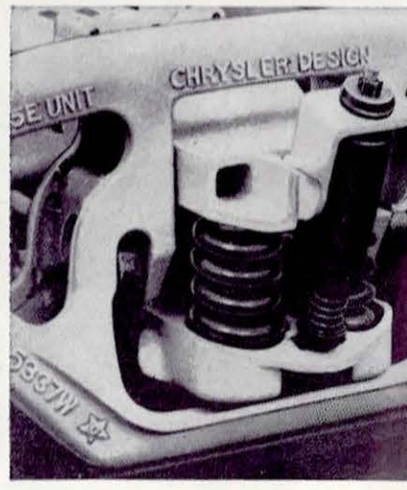

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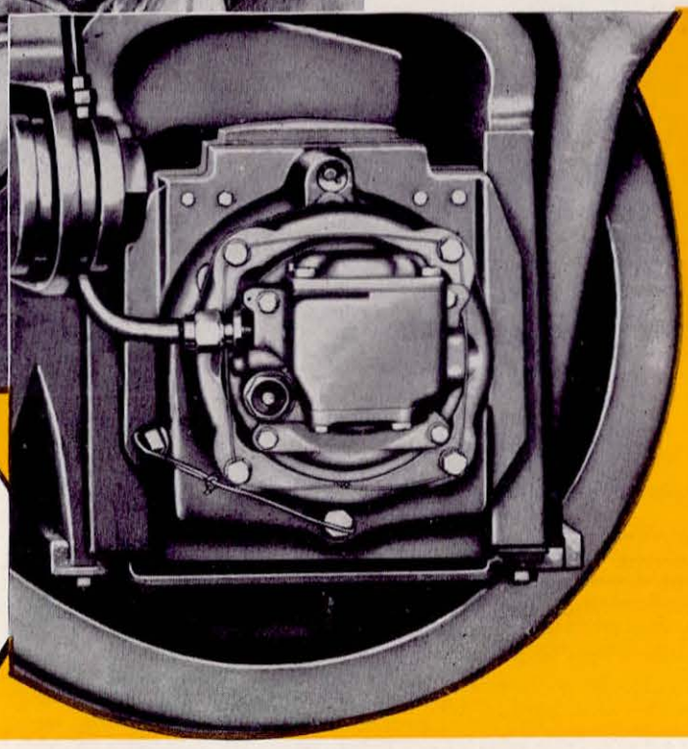

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Vol. 133, No. 11 September 15, 1952

RAILWAY AGE

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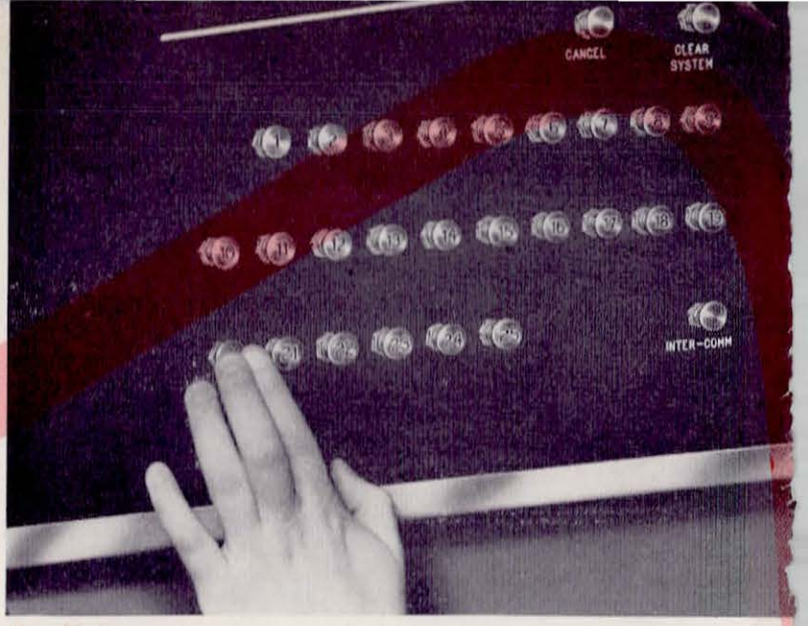

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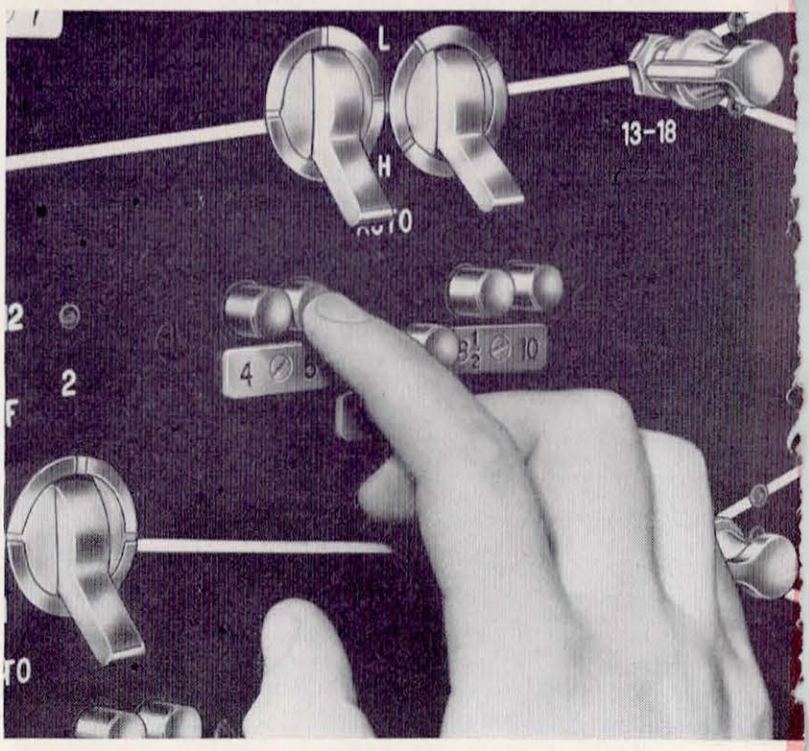

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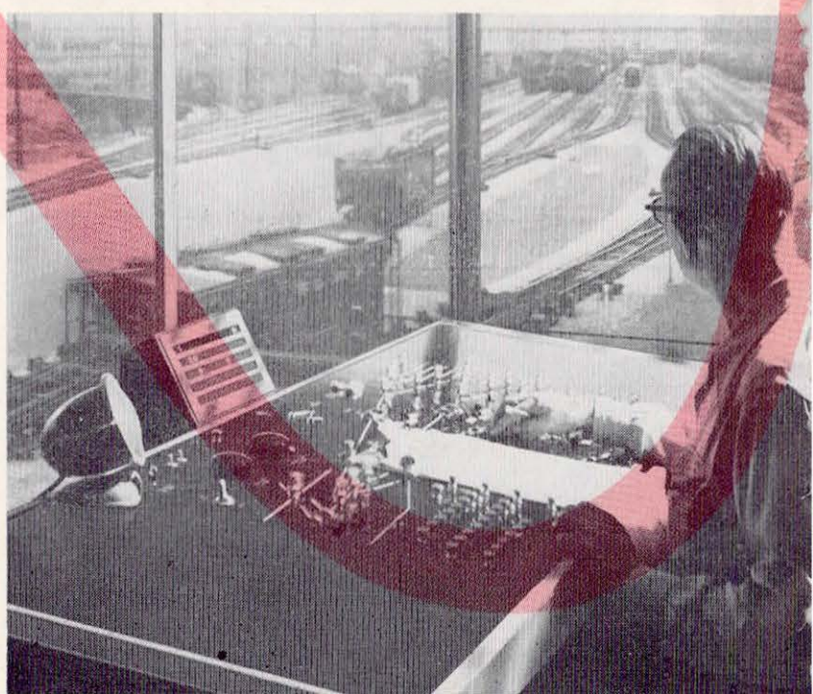

WEEK AT A GLANCE

CURRENT RAILWAY STATISTICS

Operating revenues, seven months	
1952	$5,911,265,980
1951	5,854,235,231
Operating expenses, seven months	
1952	$4,634,987,983
1951	4,646,642,007
Taxes, seven months	
1952	$ 672,002,739
1951	645,095,748
Net railway operating income, seven months	
1952	$ 503,043,404
1951	443,128,736
Net income, estimated, seven months	
1952	$ 326,000,000
1951	278,000,000
Average price railroad stocks	
September 9, 1952	62.16
September 11, 1951	54.46
Car loadings, revenue freight	
35 weeks, 1952	24,654,387
35 weeks, 1951	27,031,853
Average daily freight car surplus	
Week ended September 6, 1952	8,611
Week ended September 8, 1951	3,960
Average daily freight car shortage	
Week ended September 6, 1952	5,316
Week ended September 8, 1951	12,646
Freight cars delivered	
August 1952	4,537
August 1951	7,183
Freight cars on order	
September 1, 1952	95,761
September 1, 1951	139,104
Freight cars held for repairs	
August 1, 1952	111,680
August 1, 1951	101,001
Average number railroad employees	
Mid-July 1952	1,182,485
Mid-July 1951	1,295,890

In This Issue . . .

THE REALLY VITAL VOTES in the coming November election will be those cast for members of Congress and of the state legislatures, because it is primarily in those law-making bodies that the dangerous trend toward "big government," socialism, statism—call it what you will—will be accelerated, continued, stopped or reversed. The reasoning behind that statement, and a suggestion as to what railroad men can do about it, are set out in more detail in the leading editorial (page 71).

BETTER CUSTOMER RELATIONS—and better accounting—are the major results anticipated by the Illinois Central from a 43-lesson home study rate course recently completed by 1,055 IC employees. The course and its conduct are described in the page 73 feature article.

RAILROAD ELECTRIFICATION is not by any means a "dead duck"—even with diesels presently doing a larger and larger share of the total work. That is the general conclusion of a Battelle Memorial Institute study, which is summarized in some detail on pages 82-84. Factors which may combine to make further electrification attractive, the report suggests, are technical developments leading to a possible reduction in first cost of electrification, and an equally possible future increase in cost of liquid fuel. The report also points out possible avenues for further research on the subject.

RADIUM ROAD—that's the 923-mile Northern Alberta, third largest railway in Canada, which reaches north from Edmonton toward the Dominion's still wild, but rapidly awakening, "new north." A description of the NA, with map and pictures, begins on page 80.

A COUPLE OF TECHNICAL DEVELOPMENTS are the subjects of other features—how the SP uses Cobalt-60 for effective, cheap and non-destructive testing of castings, on page 76; and how the C&NW is realizing maintenance economies from selective use of a McWilliams "cribber," on page 78.

In Washington . . .

DESPITE THE STEEL STRIKE, financial results for July and 1952's first seven months, for the railroads as a whole, were considerably better than those for the comparable flood-affected periods of 1951. It must be remembered, however, that the figures as reported

WEEK AT A GLANCE

on pages 7 and 11, cover *all* Class I railroads—they obviously don't mean that every individual company made a better showing.

ASIDE FROM THE EARNINGS REPORT, railroad news from Washington was definitely on the light side last week. The I.C.C. refused to reconsider its Ex Parte 175 decision, and received a Nickel Plate petition asking that the Lackawanna be required to sell its Nickel Plate stock. The D.T.A. announced its approval of fourth-quarter construction projects, while the A.A.R. and A.R.C.I. jointly announced a sharp, but not surprising, drop in freight car production for August.

. . . And Elsewhere

ADDED TRAFFIC FOR AT LEAST TWO RAILROADS—the Chesapeake & Ohio and the Norfolk & Western—is a probably inevitable result of the Atomic Energy Commission's plans to build a $1.2 billion uranium 235 plant in Pike county, Ohio, 22 miles north of Portsmouth and 80 miles east of Cincinnati. The plant, it is understood, will cover about 6,500 acres and will employ an average force of about 17,000 construction workers during a four-year building period. Power supply for the plant alone will reportedly require about 7.5 million tons of coal per year. The C&O passes the proposed plant site on the east and the N&W on the west.

ANY IDEA THAT RAILROADS—or other industrial corporations—are owned exclusively by "bloated capitalists" ought to be thoroughly exploded by the study of "Share Ownership in the United States," recently completed by the Brookings Institution of Washington, D.C. The study shows, for example, that 101,589,000 shares of 99 issues of railroad common stock are divided among 756,100 separate holdings, with the average holding just 134.4 shares. In preferred stocks, 54 issues, totaling 21,614,000 shares, are divided into 173,900 individual holdings, averaging 124.3 shares each. For common and preferred stocks combined, average ownership of 123,203,000 shares in 930,000 individual holdings is 132.5 shares per holding. Of common stock alone, there are 569,916 individual holdings of less than 100 shares each; 177,525 of 100 or more shares but less than 1,000, and only 8,650 individual holdings of 1,000 shares or over. Many of these last, of course, are actually owned by investment funds or other fiduciary institutions.

THE GROWTH of the railroads, and their contributions to the national welfare, have occurred in an atmosphere of free enterprise, which is the "only economic system under which the full capabilities of men and industry can be realized," Fred G. Gurley (above), president of the Santa Fe, said at Chicago on September 8 in an address which was one of the features of the recent Centennial of Engineering. A more detailed account of Mr. Gurley's address, and of one by H. R. Clarke, chief engineer of the Burlington, are included in the feature article which begins on page 85.

DOME CARS may ultimately become like pickles—available in 57 different varieties. The Official Guide reveals Vista, Astra, Strata, Pleasure, Planetarium and "just plain" dome cars currently serving railroad passengers with a "top" view of the American countryside. To this list must soon be added "Super"—a term the Milwaukee has selected to describe the forthcoming full-length dome-lounge cars (*Railway Age*, March 24, page 17) for "Olympian Hiawatha" and "Twin Cities Hiawatha" service. The name was selected from entries in a "Name the Cars" contest conducted among employees. The winning name brought award of a $150 U. S. savings bond.

AN ENCOURAGING—though obviously not conclusive—indication of better railroad credit is the fact that the Wellington Fund—one of the country's largest mutual investment companies—approximately doubled its holdings of railroad common stocks in the six months between January 1 and June 30. The railroads' "improved earnings outlook due to higher freight and passenger rates" was cited as reason for the purchases.

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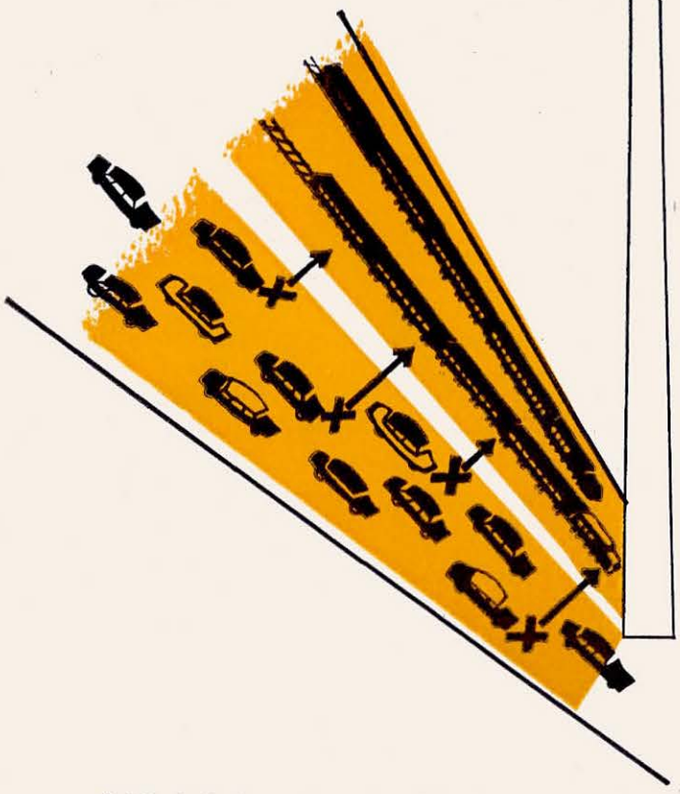

Rail Credit Cards—are honored at all Hertz stations. They serve as identification, eliminate deposit requirements, and provide credit privileges if desired.

Recent surveys and constant checking of "out-of-town" rentals, indicate that thousands and thousands of people are now traveling by train who formerly drove their own cars long distances merely to have a car to drive at their destinations. They have switched to rail travel, and these surveys indicate that these Rail-Auto passengers traveled over 500 million miles on the railroads in 1951!

If your railroad is not joining with the other leading lines in co-operating with the Hertz Rail-Auto Travel Plan, you are failing to help hasten the switch that can return vast lost revenue back to the railroads. Hertz' continuous advertising in 2 and 4-color pages in Life, Saturday Evening Post, Collier's, Holiday, National Geographic, Time, Newsweek, U. S. News & World Report and other publications . . . many thousands of Hertz Rail-Auto folders distributed yearly . . . constant promotion of the plan by the railroads in their own advertising . . . timetables . . . literature . . . these are steadily producing startling results.

But remember, this private auto long distance travel is estimated at 500 *billion* passenger miles yearly! Your railroad too, should be persuading its share of this amazing potential to use trains and get their cars at destination through the Hertz Rail-Auto Travel Plan. Hertz, world's largest car rental organization, with more than 700 stations in more than 500 cities throughout the United States, Canada, Great Britain, Mexico, Hawaii and Alaska, created the Hertz Rail-Auto Travel Plan to provide travelers with new cars, at low rates and with gas, oil and insurance furnished when they arrive at their destinations. Great numbers of people, particularly vacationists and business people, now are using the Rail-Auto Plan regularly. For complete details, write Hertz Driv-Ur-Self System, Inc., Dept. D-92, 218 South Wabash Avenue, Chicago 4, Illinois.

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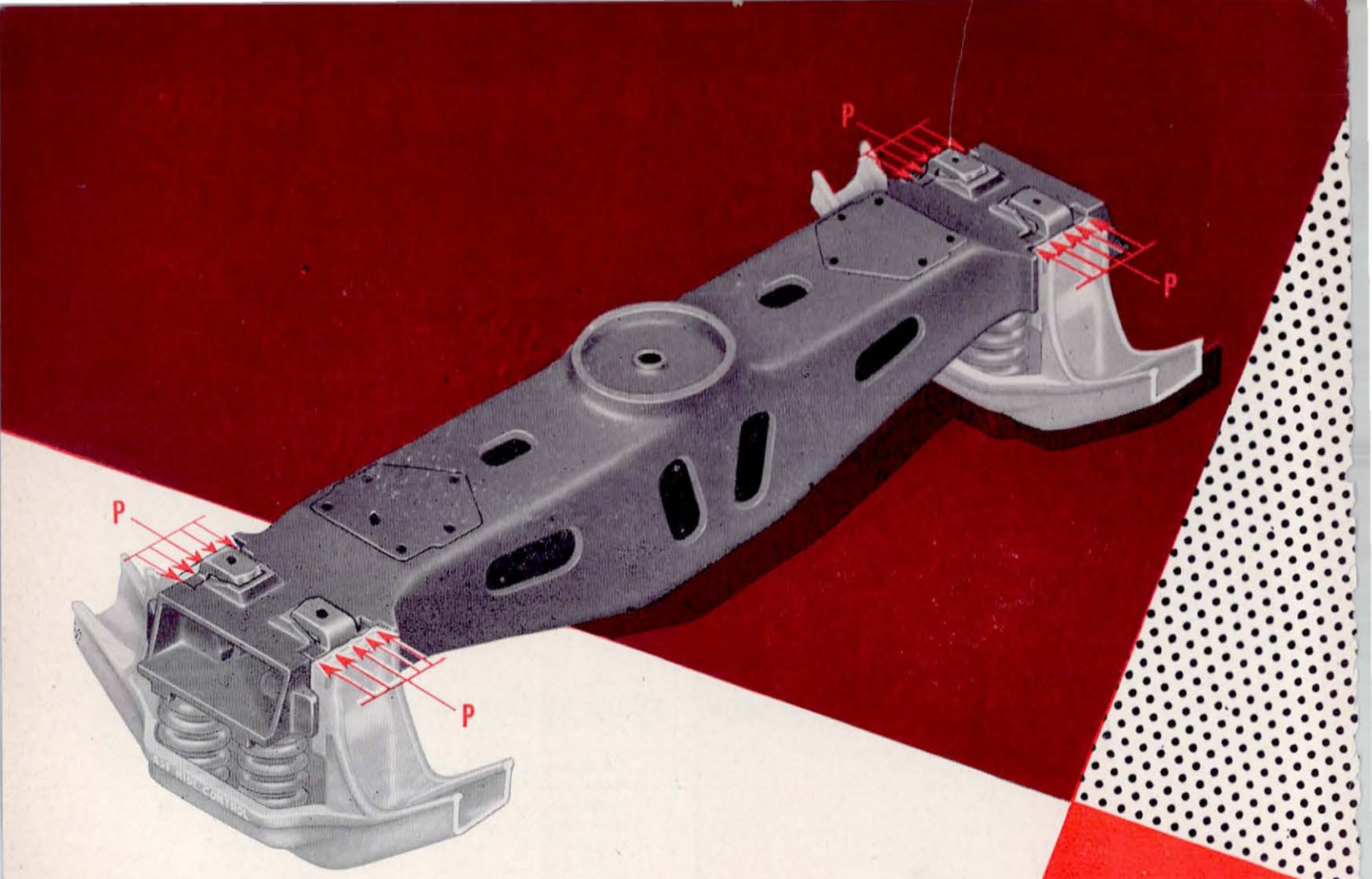

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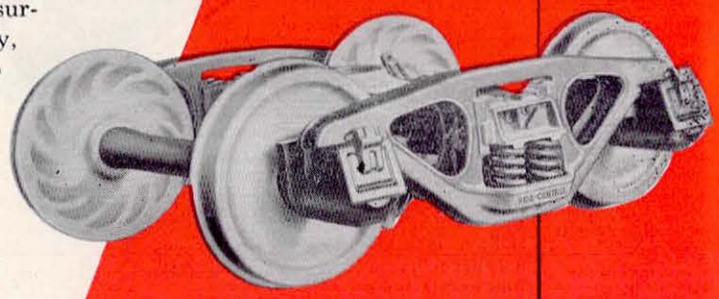

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Record All-Rail Ore Shipments in Prospect

Railroad officers have advised the Defense Transport Administration that the ability of railroads to move iron ore throughout the winter "is limited only by the ability to produce and unload it," James K. Knudson, D.T.A. adminstrator, said in a September 5 statement.

Discussing the all-rail ore movement which has developed as a result of the recent steel strike, Mr. Knudson said the rail carriers believe car loadings "will be increased to exceed 600 cars daily for a portion of the season." A goal of 450 cars a day was set, but this already is being exceeded. On August 27 the roads loaded and moved out 564 cars of ore, Mr. Knudson reported.

"Railroads already playing an essential role in the Great Lakes movement by hauling ore from mines to loading docks at the head of the lakes for shipment by vessels to the lower lake ports and thence by rail to inland consuming points, have taken on another herculean task," Mr. Knudson said.

To show the rapid expansion in rail movements of iron ore, Mr. Knudson pointed out that ore loadings in the Lake Superior region, for both all-rail and vessel movements, amounted to 1,749 cars for the week ended July 26. This jumped to 52,824 cars the week after the strike ended.

"During the week ended August 9, all iron ore loadings in Northern ranges had climbed to 60,000 cars, more ore than has been loaded in any one week in the last ten years," the D.T.A. administrator continued. As for the all-rail movement, D.T.A. expects at least 4,000,000 tons of ore will have moved overland by the time this year's lake navigation season ends.

Meanwhile, the lake ore movements are behind schedule. Despite record-breaking shipments in recent weeks, the cumulative total of ore moved down the lakes to September 1 amounted to 37,787,403 gross tons, compared with 58,844,741 tons in the corresponding period last year.

The D.T.A. admisintrator pointed out, however, that in the period from July 28 until September 1 this year, the lake movements were nearly a million tons greater than in the same five-week period last year. For the week ended September 1, ore shipments attained the highest weekly record in history, while the 14,367,627 gross tons moved down the lakes in August set an all-time monthly record.

"Although the steel strike has scuttled the original target goal of having 95,000,000 tons of iron ore, including Canadian ore, moved down the lakes this year, D.T.A. still hopes to see at least 76,600,000 tons moved before the lakes freeze over," Mr. Knudson said.

Commenting briefly on import ore movements, Mr. Knudson said such movements are making a "substantial contribution to steel mill stockpiles." He said D.T.A. has been advised of a "steady expansion" in the number of deep-sea ore carriers, and he noted that 3,744,816 net tons of foreign iron ore moved through this nation's ports from January to May of this year.

Net Income for 1952 Reaches $326 Million

Class I railroads in the first seven months this year had an estimated net income, after interest and rentals, of $326,000,000, according to the Bureau of Railway Economics of the Association of American Railroads.

The 1952 figure compares with net income of $278,000,000 for the first seven months last year. Net railway operating income in the seven-month period this year totaled $503,043,404, as compared with $443,128,736 in the seven months of 1951.

Estimated results for July 1952 showed net income of $36,000,000, compared with $18,000,000 in July 1951. The A.A.R. noted that in July of last year operating expenses were sharply increased due to midwestern floods.

The July 1952 net railway operating income was $60,963,231. During the same month last year net railway operating income totaled $44,271,049.

In the 12 months ended with July, the rate of return averaged 3.98 per cent, compared with 4.12 per cent for the 12 months ended with July 1951.

Gross in the first seven months of 1952 amounted to $5,911,265,980, a one per cent increase over the 1951 period, when gross amounted to $5,854,235,231. Operating expenses in the 1952 period

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended September 6 were announced by the Association of American Railroads on September 11 as follows:

	Surplus	Shortage
Plain Box	247	2,216
Auto Box	326	0
Total Box	573	2,216
Gondola	355	1,854
Hopper	15	907
Covered Hopper	4	133
Stock	622	35
Flat	5	171
Refrigerator	6,377	0
Other	660	0
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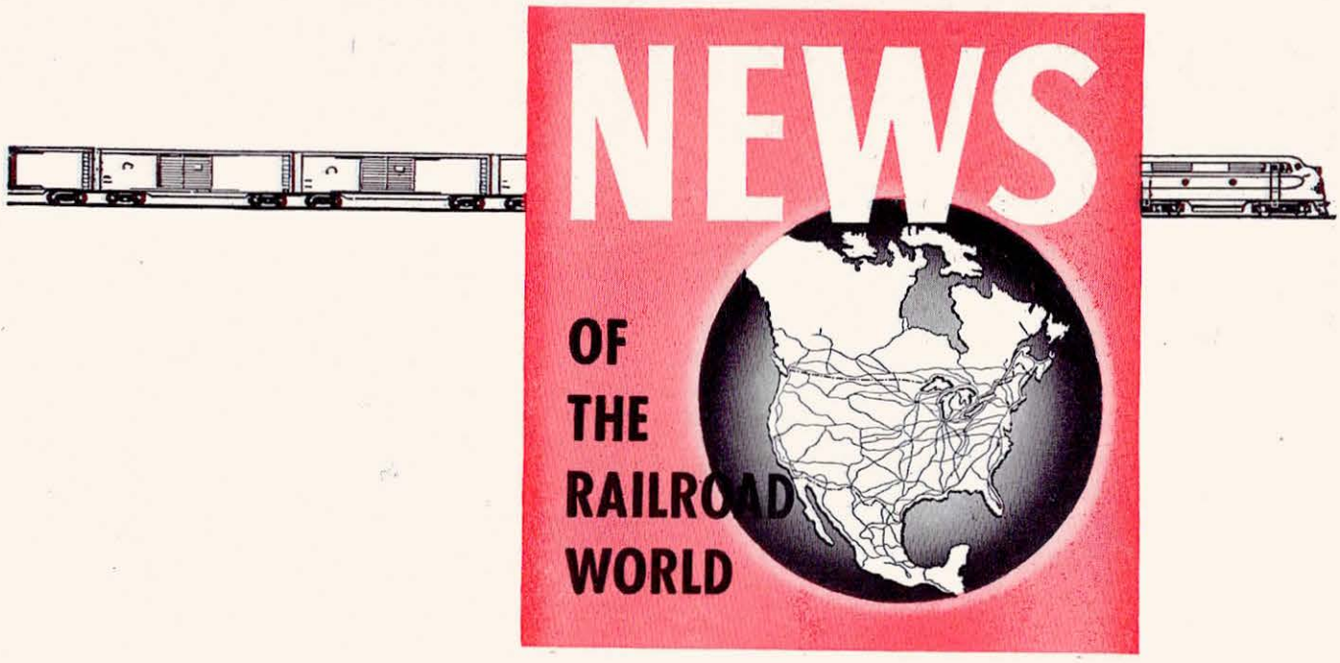


Record All-Rail Ore Shipments in Prospect

Railroad officers have advised the Defense Transport Administration that the ability of railroads to move iron ore throughout the winter "is limited only by the ability to produce and unload it," James K. Knudson, D.T.A. adminstrator, said in a September 5 statement.

Discussing the all-rail ore movement which has developed as a result of the recent steel strike, Mr. Knudson said the rail carriers believe car loadings "will be increased to exceed 600 cars daily for a portion of the season." A goal of 450 cars a day was set, but this already is being exceeded. On August 27 the roads loaded and moved out 564 cars of ore, Mr. Knudson reported.

"Railroads already playing an essential role in the Great Lakes movement by hauling ore from mines to loading docks at the head of the lakes for shipment by vessels to the lower lake ports and thence by rail to inland consuming points, have taken on another herculean task," Mr. Knudson said.

To show the rapid expansion in rail movements of iron ore, Mr. Knudson pointed out that ore loadings in the Lake Superior region, for both all-rail and vessel movements, amounted to 1,749 cars for the week ended July 26. This jumped to 52,824 cars the week after the strike ended.

"During the week ended August 9, all iron ore loadings in Northern ranges had climbed to 60,000 cars, more ore than has been loaded in any one week in the last ten years," the D.T.A. administrator continued. As for the all-rail movement, D.T.A. expects at least 4,000,000 tons of ore will have moved overland by the time this year's lake navigation season ends.

Meanwhile, the lake ore movements are behind schedule. Despite record-breaking shipments in recent weeks, the cumulative total of ore moved down the lakes to September 1 amounted to 37,787,403 gross tons, compared with 58,844,741 tons in the corresponding period last year.

The D.T.A. admisintrator pointed out. however, that in the period from July 28 until September 1 this year, the lake movements were nearly a million tons greater than in the same five-week period last year. For the week ended September 1, ore shipments attained the highest weekly record in history, while the 14,367,627 gross tons moved down the lakes in August set an all-time monthly record.

"Although the steel strike has scuttled the original target goal of having 96,000,000 tons of iron ore, including Canadian ore, moved down the lakes this year, D.T.A. still hopes to see at least 76,600,000 tons moved before the lakes freeze over," Mr. Knudson said.

Commenting briefly on import ore movements, Mr. Knudson said such movements are making a "substantial contribution to steel mill stockpiles." He said D.T.A. has been advised of a "steady expansion" in the number of deep-sea ore carriers, and he noted that 3,744,816 net tons of foreign iron ore moved through this nation's ports from January to May of this year.

Net Income for 1952 Reaches $326 Million

Class I railroads in the first seven months this year had an estimated net income, after interest and rentals, of $326,000,000, according to the Bureau of Railway Economics of the Association of American Railroads.

The 1952 figure compares with net income of $278,000,000 for the first seven months last year. Net railway operating income in the seven-month period this year totaled $503,043,404, as compared with $443,128,736 in the seven months of 1951.

Estimated results for July 1952 showed net income of $36,000,000, compared with $18,000,000 in July 1951. The A.A.R. noted that in July of last year operating expenses were sharply increased due to midwestern floods.

The July 1952 net railway operating income was $60,963,231. During the same month last year net railway operating income totaled $44,271,049.

In the 12 months ended with July, the rate of return averaged 3.98 per cent, compared with 4.12 per cent for the 12 months ended with July 1951.

Gross in the first seven months of 1952 amounted to $5,911,265,980, a one per cent increase over the 1951 period, when gross amounted to $5,854,235,231. Operating expenses in the 1952 period

CLASS I RAILROADS — UNITED STATES

	1952	1951
	Month of July	
Total operating revenues	$790,718,295	$817,037,858
Total operating expenses	634,398,332	681,118,688
Operating ratio — per cent	80.23	83.36
Taxes	79,652,721	73,787,280
Net railway operating income (Earnings before charges)	60,963,231	44,271,049
Net income, after charges (estimated)	36,000,000	18,000,000
	Seven Months Ended July 31	
Total operating revenues	$5,911,265,980	$5,854,235,231
Total operating expenses	4,634,987,983	4,646,642,007
Operating ratio — per cent	78.41	79.37
Taxes	672,002,739	645,095,748
Net railway operating income (Earnings before charges)	503,043,404	443,128,736
Net income, after charges (estimated)	326,000,000	278,000,000

were $4,634,987,983, compared with $4,646,642,007, a decrease of 0.3 per cent.

Twenty-six Class I roads failed to earn interest and rentals in the first seven months of 1952, according to the A.A.R. report.

Firemen Walk Out On C&IM—Briefly

A walkout of 30 members of the Brotherhood of Locomotive Firemen & Enginemen hampered—but did not halt—operations of the Chicago & Illinois Midland for somewhat less than 24 hours on September 5. The firemen returned to their jobs the following midnight in accordance with a request of the National Mediation Board received during the day at the Cleveland headquarters of the brotherhood. The union told its members to return for "a reasonable length of time" pending mediation meetings. The dispute is over a new contract being sought by the brotherhood and a number of "unsettled grievances."

Harriman Awards to Be Presented September 17

The E. H. Harriman Memorial Gold Medals for the best safety records in 1951 among domestic railroads will be awarded at a dinner in the Hotel Ambassador, New York City, on September 17.

The St. Louis-San Francisco will receive the gold medal for Class A railroads; the Canadian Pacific lines in the United States for Class B railroads, and the Colorado & Wyoming for Class C railroads.

Certificates of commendation for outstanding performance in railroad safety will be awarded to the following: Eastern District: Class A—Reading; Class B—Pennsylvania-Reading Seashore Lines; Class C—Cambria & Indiana; Western District: Class A—Great Northern; Class B—Denver & Rio Grande Western; Class C—Texas Mexican; Southern District: Class A—Norfolk & Western; Class B—Nashville, Chattanooga & St. Louis; Class C—Tennessee Central.

In addition, certificates of commendation also will be awarded to two switching and terminal companies—one certificate for the group comprising large companies and another for the group which embraces smaller companies: Group ST-1—Cleveland Union Terminals; Group ST-2—River Terminal.

The E. H. Harriman Memorial Medals, founded in 1913 by the late Mrs. Mary W. Harriman, in memory of her husband, Edward H. Harriman, have been awarded heretofore 32 times by the American Museum of Safety. The awards will be presented by James G. Lyne, editor of *Railway Age* and chairman of the museum's Harriman Award Committee. Cyril Ainsworth, president of the museum, will preside. Mr. Ainsworth also will present the Arthur Willams Memorial Medal to H. W. Heinrich, assistant superintendent, engineering and inspection division, Travelers Insurance Company.

The awards are determined on the basis of official records of the Interstate Commerce Commission for 1951, railroads being ranked in their several groups according to their individual safety ratings.

Single Transport Agency To Get More C. of C. Study

The Transportation and Communications Committee of the U.S. Chamber of Commerce, which meets in Washington, D. C., September 17-18, will give "special attention" at the meeting to a subcommittee report on the question of "consolidation of all federal transport regulatory, administration and promotional functions."

The committee expects to decide further action "on the basis of this report." At present, the U. S. chamber supports the idea of a single federal transport agency.

Other matters scheduled for consideration at the September meeting are such topics as user charges, ton-mile taxation, federal funds for highways and compulsory arbitration of railway labor disputes. The committee will consider proposals made on these subjects since its last meeting.

Tariff Study Group Sends Out Questionnaire No. 14

The Railroads' Tariff Research Group has sent out the fourteenth of the series of questionnaires whereby it is seeking views of interested parties on ways and means of simplifying and otherwise improving tariffs.

Questionnaire No. 14 asks: Do letter prefixes to the tariff number denoting territorial application assist you in selecting the right tariff?

Fowler Becomes New Mobilization Director

Henry H. Fowler, chief of the Defense Production Administration and the National Production Authority, was sworn in last week as the nation's new Defense Mobilizer. He will head the Office of Defense Mobilization.

Mr. Fowler thus becomes top man in the mobilization program. His new job is the one from which Charles E. Wilson resigned a few months ago. Mr. Wilson left as a result of the steel price-wage dispute, and Dr. John R. Steelman, assistant to President Truman, has been filling in as Acting Defense Mobilizer since that time.

The new O.D.M. chief will continue as head of D.P.A. and N.P.A., at least

SPECIALLY ENGINEERED CAR speeds sanitary handling of bulk cane sugar—First use of this newly designed car brought 50 tons of cane sugar from the Revere Sugar Refinery, Boston, to the Pittsburgh plant of the D. L. Clark Company, candy manufacturer. The special car, to be joined in service by additional units, is loaded mechanically through six portholes in the top. When loading is complete, portholes are hermetically sealed. On arrival the car can be unloaded in about 50 minutes through three portholes in the bottom. Bulk sugar is siphoned out by three screw-type unloaders into downpipes leading to sugar storage bins. Total capacity of the mechanical unloaders is 90 tons an hour. Engineering and development of the car, and installation of loading and unloading equipment, was financed by the Clark and Revere companies.

for the time being. Mr. Fowler, a Roanoke, Va., lawyer, entered the mobilization set-up in September 1951 as deputy administrator of N.P.A. He later became head of that agency, and of D.P.A., upon the resignation of Manly Fleischmann.

Freight Car Loadings

Loading of revenue freight in the week ended September 6, which included the Labor Day holiday, totaled 746,044 cars, the Association of American Railroads announced on September 11. This was an increase of 18,700 cars, or 2.6 per cent, compared with the previous week, when the mine workers' memorial holiday was in effect; an increase of 13,275 cars, or 1.8 per cent, compared with the corresponding week last year; and a decrease of 5,405 cars, or 0.7 per cent, compared with the equivalent 1950 week.

Loadings of revenue freight for the week ended August 30 totaled 727,344 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, August 30

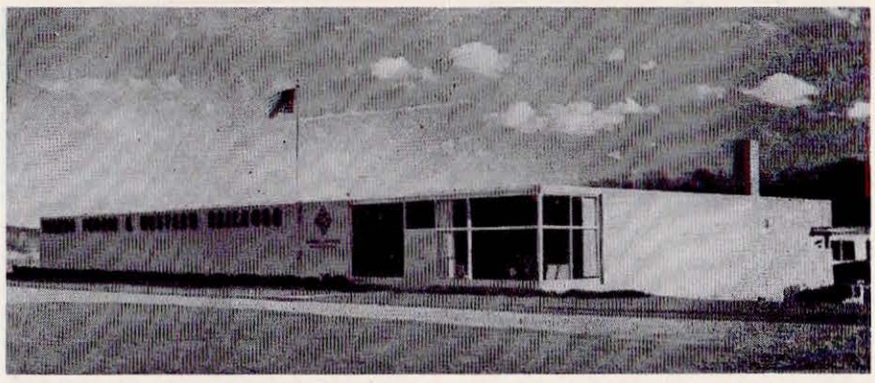
District	1952	1951	1950
Eastern	119,676	140,190	148,738
Allegheny	140,549	172,581	174,391
Pocahontas	21,832	65,486	63,187
Southern	110,071	124,097	128,884
Northwestern	149,911	138,591	143,703
Central Western	122,921	123,699	130,220
Southwestern	62,384	64,837	62,718
Total Western Districts	335,216	327,127	336,641
Total All Roads	727,344	829,481	851,841
Commodities:			
Grain and grain products	50,269	52,186	50,685
Livestock	10,852	10,159	9,387
Coal	39,249	150,725	155,531
Coke	13,126	15,458	14,893
Forest products	48,751	45,711	49,732
Ore	94,552	84,855	83,296
Merchandise l.c.l.	74,459	76,304	90,836
Miscellaneous	396,086	394,083	397,481
August 30	727,344	829,481	851,841
August 23	834,120	838,587	838,665
August 16	805,704	829,398	851,240
August 9	782,171	809,365	847,708
August 2	732,920	813,388	837,430
Cumulative total 35 weeks	24,654,387	27,031,853	25,130,037

I.C.C. Won't Reconsider Ex Parte 175 Decision

The Interstate Commerce Commission has denied various petitions for reconsideration of the Ex Parte 175 decision. A dozen groups had asked the commission to take another look at the April 11, 1952, report and order which authorized a general freight rate increase for the nation's railroads.

Among those seeking reconsideration were the Southeastern Association of Railroad and Utilities Commissioners, the Southern Traffic League, the Mountain-Pacific Conference of Public Service Commissions, the Public Utilities Commissioner of Oregon, and the Pacific Northwest Grain & Grain Products Association.

The commission denied the petitions with the statement that the groups had made "no showing of error of fact or law in the report and orders of April 11, 1952."



"OFFICE OF THE YEAR"—honorable mention in a competition sponsored by Office Management and Equipment magazine—went to the East Peoria (Ill.) general office building of the Toledo, Peoria & Western (above). A bronze plaque will be awarded to the road's president, J. Russel Coulter, at a luncheon in New York October 20. Selection of the award winners was based on suggestions of members of the American Institute of Architects and the Association of Consulting Management Engineers following analyses of offices from coast to coast. For a full description of the TP&W building see *Railway Age*, September 10, 1951.

PRR Files New Tariffs for Baltimore-Washington Area

The Pennsylvania has filed tariffs, effective October 1, to bring about an average increase of approximately 13 per cent in its commutation fares in the Baltimore-Washington area. The new fares, the road said, will put its commutation fares in that area on a par with those of other eastern cities. Maximum increase, applicable for distances of 13 miles and over, is 75 cents in the cost of weekly commutation tickets, $2.70 in the cost of the Monday-to-Friday monthly tickets and $3 in the cost of unrestricted monthly tickets.

Gas Turbine Now on C&NW For 90-Day Service Test

The 4,000-hp. Westinghouse-Baldwin gas turbine locomotive, which recently completed a series of tests on the Missouri-Kansas-Texas *(Raliway Age*, July 21, page 16), is currently undergoing a 90-day service test on the Chicago & North Western. The single-unit locomotive has been assigned to passenger service between Chicago and Elroy, Wis.,—205 miles—handling the "Duluth-Superior Limited" westbound and the "Rochester-Minnesota Special" eastbound.

The test is being conducted in cooperation with the locomotive's builders — Westinghouse Electric Corporation and Baldwin-Lima-Hamilton Corporation.

Special Freight Cars to Tour Eastern States

The 100,000th freight car built for eastern railroads since the end of World War II will go on exhibit on the upper level of New York's Grand Central Terminal for one week beginning September 16. Following its New York appearance, the aluminum-plymetal box car is scheduled for visits to terminals of nine other major cities in the area served by the 37 railroad members of the Eastern Railroad Presidents Conference, which is sponsoring the exhibit.

Another full-scale car, the 100,001st postwar freight car delivered to eastern railroads, will tour through 77 rural communities in northeastern states. Both tours will end in May 1953.

The two cars will serve primarily as a symbol of the need for modernized government regulation of the nation's rail system. Interior displays will stress the fact that railroads have moved ahead with the times since they were put under government control in 1887, but that the mass of railroad laws now in existence restrict the railroads as though they were still the monopoly of 65 years ago.

Exhibit of the major city car, which was specially constructed for touring purposes, is said to mark the first time a life-size freight car ever has appeared in the waiting room of any railroad station. Travelers passing through Grand Central and other stations will actually see a freight car assembled before their eyes. To meet the problem of normal-sized terminal doors, the exhibit box car has been built in sections measuring approximately 7 ft. by 10 ft. A crew of six men who had hands in construction of the car will spend an average of four days putting it together on the floors of exhibiting terminals.

Its itinerary includes stopovers for public inspection in Boston, Buffalo, Philadelphia, Washington, D.C., Cleveland, Cincinnati, St. Louis, Chicago, and Detroit.

The rural car will make one-day visits to the following communities:

In *Connecticut*—Putnam; in *Delaware*—Wilmington; in *Illinois*—Champaign, East St. Louis, Paris, Pekin, and Salem; in *Indiana*—Bedford, Covington, Evansville, Fort Wayne, Martinsville, New Castle, Rensselaer, and Wabash; in *Maine*—Waterville and Perham; in *Maryland*—

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended September 6 were announced by the Association of American Railroads on September 11 as follows:

	Surplus	Shortage
Plain Box	247	2,216
Auto Box	326	0
Total Box	573	2,216
Gondola	355	1,854
Hopper	15	907
Covered Hopper	4	133
Stock	622	35
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SUPPLY TRADE

General Motors Diesel, Ltd., To Expand London Plant

A $2.5 million expansion program—the second enlargement since the plant was officially opened in August 1950—has been announced by General Motors Diesel, Ltd., of London, Ont.

The program will enable the company to provide complete service facilities for wrecked locomotives, and to rebuild, and repair, major components such as traction motors, generators and engines. It will also permit manufacture of a new model traction motor and fabrication of truck frames and a number of other components for several locomotive models.

The new building addition will be of steel and brick construction, of a character similar to existing buildings. Floor area of the plant will be increased by 85,000 sq. ft. Completion of the work is expected late in 1953.

Since the London plant went into operation two years ago, it has produced 260 locomotives for 14 Canadian customers, including 11 railroads.

A. O. Myers and **B. K. Wingerter** have been appointed, respectively, regional manager and district sales manager of the southeastern region of the **Electro-Motive Division** of **General Motors Corporation** at Jacksonville, Fla. Mr. Myers succeeds **R. L. Terrell,** who has been made manager of Electro-Motive's Cleveland plant.

Lee C. Bennett has been appointed middle Atlantic district transportation manager of the **Westinghouse Electric Corporation.** Mr. Bennett, who will retain his position as manager, marine and aviation departments, succeeds **L. A. Hester,** who has joined the Baldwin-Lima-Hamilton Corporation as locomotive sales manager.

R. H. Hill has been appointed assistant general manager of transportation sales for the **Sherwin-Williams Company.**

Wallace M. Schleicher has been appointed general sales manager of the Edison storage battery division of **Thomas A. Edison, Inc.** Mr. Schleicher, who holds an engineering degree from Lehigh University, this year completed 25 years of continuous

Wallace M. Schleicher

service with the company. He joined the sales engineering department in March 1927 and was promoted to section head in 1930, sales engineer in 1939 and commercial engineer in 1944. As commercial engineer, he has been responsible for both application and service engineering and associated sales activities.

The **Gustin-Bacon Manufacturing Company** has appointed **Edward A. McCabe** as manager of its New York division. Mr. McCabe, who will be in charge of all glass fiber insulation, industrial and railroad division sales in

Edward A. McCabe

New England, New York, New Jersey, Pennsylvania and Delaware, joined the firm in 1942. Previously he had been special engineer in the office of the executive vice-president of the New York Central System.

The **Jennison-Wright Corporation** has opened a new office at 40 East 49th street, New York City, with **Daniel W. Thompson** in charge.

The **Borg-Warner Corporation** has acquired **E. C. Atkins & Co.,** which will be known as the Atkins saw division. **Stanley J. Roush,** perviously president of the **Kerotest Manufacturing Company,** has been elected president and general manager of the

THE "CALIFORNIA ZEPHYR" STARS—along with Joan Crawford and Jack Palance (above) in the new motion picture "Sudden Fear" produced by Joseph Kaufman for RKO Radio. Also appearing in the picture is Rodna Wells, a "Zephyrette" (hostess) on the dome streamliner who appears "on duty" in the picture. Between takes (right) she learns something of the intricacies of sound recording. The picture had its premiere in New York on August 6 and a West Coast premiere is scheduled for the latter part of September. The "California Zephyr" operates between San Francisco and Chicago on the Western Pacific, the Denver & Rio Grande Western, and the Burlington.

Thomas Meloy, whose appointment as director of research for the Westinghouse Air Brake Company, and also as chairman of a research and development committee representing the various divisions of the firm, was announced on page 15 of last week's *Railway Age*. The company's recently formed research laboratory will expand substantially the research which is being done in railroad operation, braking, signaling, communications, industrial pneumatic apparatus, electronics and chemistry.

division. **H. G. Ingersoll,** also a vice-president of Borg-Warner and president of its Ingersoll steel division, and **L. G. Porter,** Borg-Warner treasurer, have been elected vice-presidents of Atkins. **Elias C. Atkins** and **W. A. Atkins,** formerly president and vice-president, respectively, of Atkins, were elected members of the new board of directors.

Fred H. Lucas has been appointed manager of structural and plate sales of the **United States Steel Company,** succeeding **A. H. Warren, Jr.,** who has retired after 43 years of service with the company. Mr. Lucas joined U.S. Steel as an apprentice in the Ambridge, Pa., plant of the American Bridge Company in 1909. He joined the Carnegie Steel Company in 1930 as a structural engineer, became manager of sales in the structural and plate division at Chicago in 1936, and remained in that position until he was appointed assistant manager of sales in the Pittsburgh office in 1947.

George E. Campbell has joined the **Bridgeport Chain & Manufacturing Co.** as district salesman in the New York office.

Richard P. Bell, for the past six years paint sales manager at the Pittsburgh warehouse of the **Pittsburgh Plate Glass Company,** has been appointed assistant general paint manager of the firm's merchandising division.

The **Maintenance Equipment Company,** of Chicago, has entered into an agreement with the **Rydin Railway Equipment Company** to act as sole agent for sale of "Ryd-in" motor car and trailer couplers for use on all maintenance-of-way operations in the United States and eastern Canada.

Fairbanks, Morse & Co. has announced the following recent personnel changes: **W. E. Watson,** manufacturing manager of the Beloit, Wis., works, has been transferred to Pomona, Cal., as general manager of the Pomona, pump works, succeeding **Charles L. Barrett,** who has become a consultant to the pump division. **Lewis H. Kessler** has been named chief hydraulic engineer at the Beloit works to succeed **R. C. Glazebrook,** who is on special assignment to the general manager. **Robert E. Craig** has been appointed assistant to the president, on special assignment. **S. L. Fry,** formerly manager of the Omaha branch diesel department, has been appointed assistant manager of the pump sales division, with headquarters at Chicago.

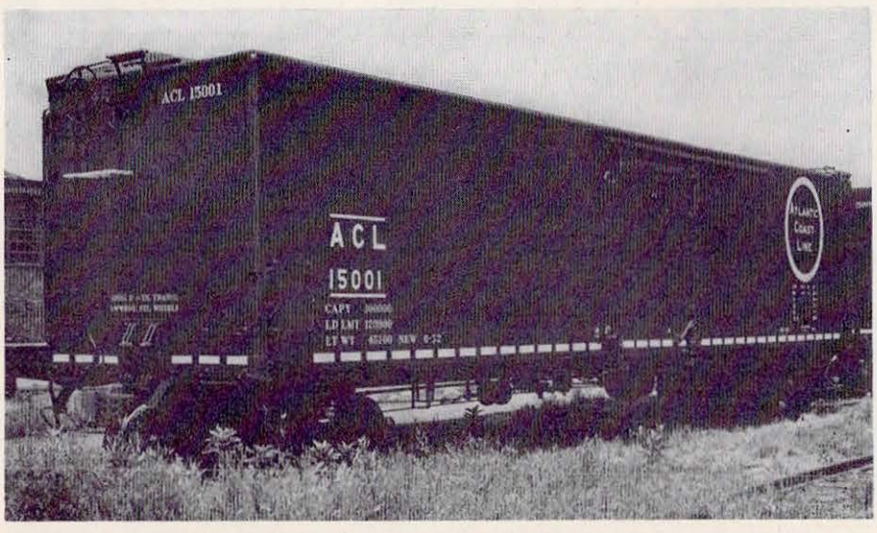
James F. Clark, who has been elected vice-president in charge of finance of the American Car & Foundry Co. Mr. Clark was formerly vice-president and treasurer. John F. Burditt, assistant treasurer for a number of years, was elected treasurer.

J. P. D. Gerrese has been appointed chief engineer of the **National Tube Division** of the **United States Steel Company,** at Gary, Ind.

The **Technical Board of the Wrought Steel Wheel Industry** has moved to new quarters at 230 North Michigan avenue, Chicago 1.

OBITUARY

Edward W. Purcell, vice-president and general manager of the Standard Railway Fusee Corporation, died on August 30 at the age of 57.



THIS "UNICEL" CAR, built by the Pressed Steel Car Company, is being tried out experimentally, in on-line service, by the Atlantic Coast Line.

FINANCIAL

New Jersey & New York.—*Reorganization.*—The I.C.C. has fixed a top limit of $22,500 for payment of counsel in connection with litigation against the Erie. Walter T. Margetts, former counsel for the trustee, was awarded $11,500 for services performed between January 17, 1947, and September 8, 1949. Richard Swan Buell, who succeeded Mr. Margetts, was awarded $8,500 for the period September 8, 1949, to April 23, 1952. The law firm of Stanley, Smoyer, and Schwartz was awarded $2,500 for services rendered between March 18, 1947, and April 18, 1952.

New York, Chicago & St. Louis.—*Opposes Delaware, Lackawanna & Western.*—This road has urged the I.C.C. to reject the recent application

wherein the Lackawanna seeks permission to name two Nickel Plate directors (*Railway Age*, September 8, page 57). The Nickel Plate also asked the commission to order the Lackawanna to divest itself of all its Nickel Plate stock.

Approval of the Lackawanna proposal, the Nickel Plate said, "would impair the independence and neutrality of Nickel Plate and would seriously affect traffic and operating relationships between Nickel Plate and other railroads operating east of Buffalo." The Nickel Plate, which connects with the Lackawanna at Buffalo, N.Y., also interchanges traffic at that point with the Lehigh Valley, the New York Central, the Erie and the Pennsylvania. All of these lines are competitive with the Lackawanna, the Nickel Plate said. The road told the commission it is "convinced" the public interest will be best served by "continuance of its independence free from any measures of control by any carrier or carriers."

The Lackawanna proposal contemplates cumulative voting of that road's 330,000 shares of Nickel Plate stock. This would enable Lackawanna to name two of Nickel Plate's 15 directors. The Lackawanna has asked the I.C.C. to dismiss the whole matter because naming of two directors would not constitute full control of Nickel Plate.

The Nickel Plate's petition to intervene in opposition to Lackawanna was accepted by the I.C.C. The commission made no ruling on other requests in the petition—i.e., forcing Lackawanna to sell its Nickel Plate stock. That matter was "deferred pending further consideration."

Pacific of Mexico.—*Export-Import Bank Loan.*—The Pacific Railroad of Mexico has recently received a loan of $5 million from the U.S. Export-Import Bank; the loan is actually a reinstatement of one made to the predecessor Southern Pacific of Mexico in 1949, before that company was purchased by the Mexican government at the end of last year. The loan will be used, among other purposes, to relay 750 miles of track with 112-lb. rail.

New Securities

Division 4 of the I.C.C. has **authorized:**

SEABOARD AIR LINE.—To issue and sell $25,000,000 of 25-year sinking fund debentures, proceeds from which will be used to reimburse the road for funds used to redeem its series A, 4½ per cent general mortgage income bonds. The latter bonds, outstanding in the amount of $26,931,800, were called for redemption August 29 (*Railway Age*, August 18, page 18). Division 4's report approved sale of the debentures for 98.337 with interest at 3⅞ per cent. This bid for the issue was submitted by Union Securities Corporation and Merrill Lynch, Pierce, Fenner & Beane and 19 associates. The new debentures, dated September 1, will mature September 1, 1977. They were reoffered to the public at 98.815.

Dividends Declared

ALABAMA & VICKSBURG.—$3, semiannual, payable October 1 to holders of record September 8.

BESSEMER & LAKE ERIE.—preferred, 75¢, semiannual, payable October 1 to holders of record September 15.

The 1951 annual reports of 12 Class I railroads are summarized on page 98.

CHICAGO SOUTH SHORE & SOUTH BEND.—25¢, quarterly, payable September 15 to holders of record September 5.

MINNEAPOLIS & ST. LOUIS.—25¢, quarterly, payable September 15 to holders of record September 11

PHILADELPHIA & WESTERN.—$3, payable October 1 to holders of record September 15.

ST. LOUIS, ROCKY MOUNTAIN & PACIFIC.—50¢, quarterly, payable September 30 to holders of record September 15.

SEABOARD AIR LINE.—$1.25, quarterly, payable September 26 to holders of record September 15.

UNITED NEW JERSEY R.R. & CANAL.—$2.50, quarterly, payable October 10 to holders of record September 20.

VICKSBURG, SHREVEPORT & PACIFIC.—preferred, $2.50, semiannual; common, $2.50, semiannual, both payable October 1 to holders of record September 8.

WESTERN MARYLAND.—7% first preferred, $7, accumulated, payable September 29 to holders of record September 15.

Security Price Averages

	Sept. 9	Prev. Week	Last Year
Average price of 20 representative railway stocks	62.16	64.66	54.46
Average price of 20 representative railway bonds	92.70	92.90*	93.62

*Corrected.

RAILWAY OFFICERS

EXECUTIVE

As reported in *Railway Age* August 25, page 55, and September 1, page 26, **J. W. Phipps, Jr.,** general freight traffic manager—system of the BALTIMORE & OHIO, has become vice-president—traffic, succeeding **Howard E. Simpson,** who has been elected executive vice-president.

J. W. Phipps, Jr.

Mr. Phipps was born at Towson, Md., on October 8, 1897, and entered railroad service with the B&O as a clerk in the stationery department at Baltimore in September 1914, subsequently holding various positions at New York, Pittsburgh and Chicago. After military service during World War I, he returned to the B&O in March 1920 as traveling industrial agent at Pittsburgh, later holding positions as industrial agent, division freight agent and assistant general freight agent in other cities. On August 1, 1941, Mr. Phipps was appointed general freight agent at Philadelphia, and in June 1946 returned to Baltimore as general freight traffic manager of the entire system.

Albert S. Baker has been appointed executive assistant to the president of the BOSTON & MAINE at Concord, N.H. For the past 14 months Mr. Baker has been commander of the Antiaircraft Defense of Boston, at Winthrop, Mass., with the rank of colonel.

Mr. Baker was graduated from the University of New Hampshire in 1921 and entered newspaper work with the Manchester Union-Leader and later with the Concord Monitor. He served five terms in the New Hampshire legislature and for a time was chairman of the New Hampshire Committee on Interstate Cooperation. Mr. Baker has a long military record in the United States Army Reserve and the New Hampshire National Guard. During World War I he served as a private and 2nd lieutenant in the infantry. In 1940 he entered federal service with the 197th Coast Artillery Regiment (anti-aircraft) of the N.H.N.G. and served nearly four years in the Southwest Pacific. He then served as Chief of Staff of the 14th Anti-aircraft Command which was under General MacArthur's control. Mr. Baker was recalled to active duty two years ago and for the past 14 months has been commander of the anti-aircraft defense of Boston and Fort Banks at Winthrop, Mass., with the rank of colonel. Until his recall to military service in 1950, he was director of public information for the Brown Company of Berlin, N. H., and LaTuque, Que.

Albert S. Baker

Joseph F. Flynn has been appointed assistant to assistant to vice-

president of the property protection and freight claim departments of the NEW YORK CENTRAL at New York. Mr. Flynn was formerly special assistant in the property protection department.

FINANCIAL, LEGAL & ACCOUNTING

R. E. L. Harmon has been appointed special representative of the Freight Loss and Damage Prevention Section, ASSOCIATION OF AMERICAN RAILROADS, succeeding **A. L. Green,** whose retirement was noted in *Railway Age* of August 11, page 17. Mr. Harmon, who has 24 years of railroad service, was formerly with the Western Weighing and Inspection Bureau.

Arnold B. McKinnon, law assistant of the SOUTHERN, has been appointed solicitor, with headquarters remaining at Washington, D.C.

L. F. Peterlin, chief clerk to the auditor of revenues of the NEW YORK, CHICAGO & ST. LOUIS (NICKEL PLATE) has been promoted to assistant auditor of revenues, with headquarters as before at Cleveland, succeeding **E. P. Lavelle,** who retired on August 31, after 44 years of railroad service.

W. F. Boebert has been appointed chief special agent and general claim agent of the WESTERN PACIFIC at San Francisco, succeeding **A. D. Thatcher,** who has retired. **E. H. Carleton** succeeds Mr. Boebert as assistant chief special agent and claim agent.

OPERATING

Robert E. Mattson, general superintendent of transportation of the NORTHERN PACIFIC, has returned from Ireland, where, during a six-months' leave of absence, he acted as consultant to the CORAS IOMPAIR EIREANN (Irish Transport Company) (*Railway Age*, February 25, page 21). Mr. Mattson was stationed in Dublin. In his absence, his NP duties were taken over by **E. S. Ulyatt,** assistant general superinendent of transportation, at St. Paul.

W. C. Satterfield has been appointed trainmaster of the UNION PACIFIC at Denver.

R. Leon Miller, safety supervisor of the SOUTHERN at Birmingham, Ala., has been appointed general safety supervisor at Cincinnati, succeeding **Mahlon Bracy,** who has resigned.

T. D. Williams, superintendent of transportation of the LOUISVILLE & NASHVILLE, has been appointed assistant general manager at Louisville. **J. C. Grissom,** assistant superintendent of transportation, succeeds Mr. Williams. **Jack Small,** assistant superintendent of transportation, will assume the former duties of Mr. Grissom. **W. G. McGowan,** superintendent of the Louisville division, succeeds Mr. Small, and **J. B. Clark,** assistant to general manager, succeeds Mr. McGowan. The position of assistant to general manager has been abolished.

Mr. Williams has been with the L&N since 1926, when he was employed as instrumentman on the Louisville divi-

T. D. Williams

sion. He became assistant superintendent—chief dispatcher in September 1945. A year later he advanced to general superintendent, and was further promoted to assistant superintendent of transportation in 1949. He has served as superintendent of transportation since March 1951.

E. R. Moran, assistant superintendent of the DENVER & RIO GRANDE WESTERN at Grand Junction, Colo., has been promoted to superintendent, with the same headquarters. **Hubert B. Meek,** trainmaster-roadmaster at Steamboat Springs, Colo., has been appointed division trainmaster at Grand Junction, a newly created position.

E. R. Moran

John C. Kenefick, assistant extra gang foreman, succeeds Mr. Meek.

Mr. Moran's railroad career began in 1938 when he joined the Denver & Salt Lake as a section laborer. He later transferred to the engineering department where he advanced to the position of assistant roadmaster. Since joining the Rio Grande in 1944 as roadmaster, Mr. Moran has held the positions of engineer of track and trainmaster, and since September 1951, assistant division superintendent.

G. E. Pielow, trainmaster of the Smiths Falls division of the CANADIAN PACIFIC, has been appointed assistant superintendent of that division at Ottawa, Ont., succeeding **J. A. Dussault. W. R. Burroughs** has been appointed trainmaster at Smiths Falls, Ont., succeeding Mr. Pielow.

Joshua A. Curtis, trainmaster on the east end of the Baltimore division of the BALTIMORE & OHIO, has been appointed assistant superintendent of the Monongah division at Grafton, W.Va., succeeding **R. P. Bartlett,** who recently was appointed superintendent of the Baltimore Terminal division.

Mr. Bartlett, who is 50 years old, began his railroad career in 1917 as a clerk with the B&O at Grafton, W. Va. He subsequently served as chief clerk in the transportation department at Fairmont, W. Va., yardmaster at Parkersburg, W. Va., and general yard-

R. P. Bartlett

master at Clarksburg, Grafton, Baltimore and Washington. Mr. Bartlett was appointed trainmaster at Baltimore in 1944 and the following year transferred to Cumberland, Md. He became assistant superintendent of the Monongah division at Grafton in 1950.

W. O. Brinson has been appointed trainmaster of the Jacksonville district of the ATLANTIC COAST LINE at Sanford, Fla., succeeding **J. W. Plant,** who has been transferred to Ocala, Fla.

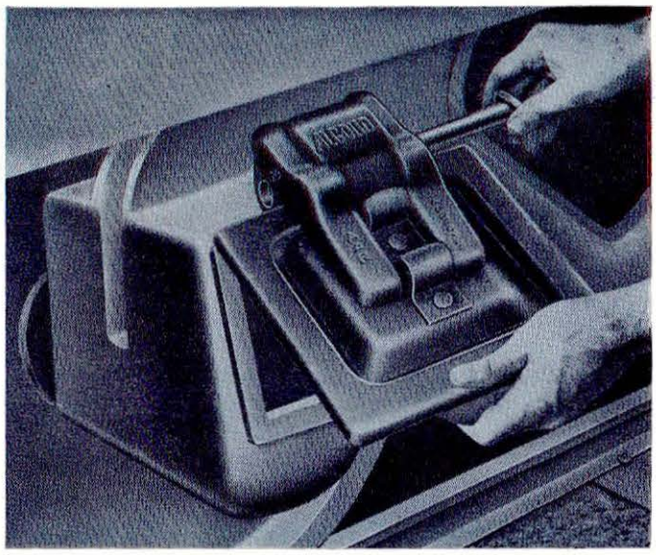
Effective 2:01 a.m. September 28, territory comprising the present Hartford division of the NEW YORK, NEW HAVEN & HARTFORD will be included in the New Haven division, **W. S. Carr,** superintendent.

P. L. Koehler, assistant division superintendent of the CHESAPEAKE & OHIO at Logan, W. Va., has been appointed to the newly created position of superintendent work simplification—transportation department, at Hunting-

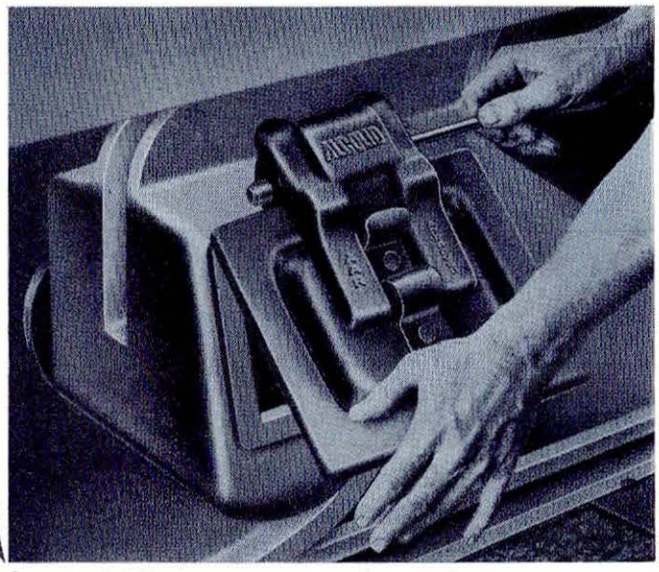
(*Continued on page* 90)

ALCOLID® installation...

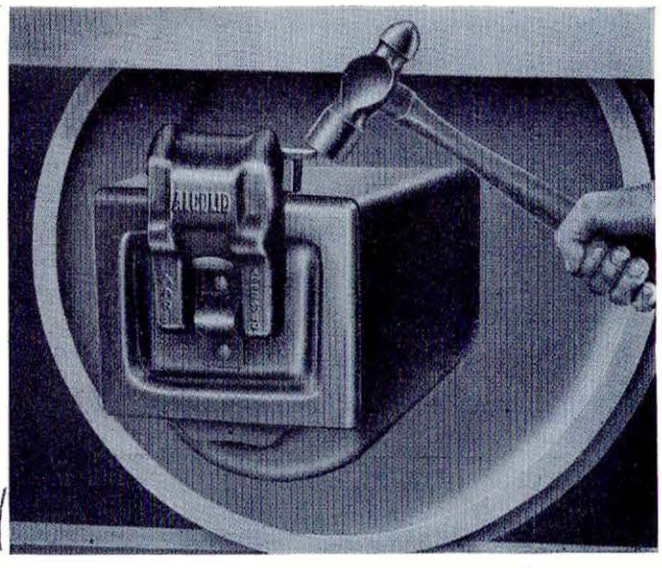
SIMPLE AS



A Align holes in lid with holes in box and insert square-headed retaining pin.



B Push lid down to put spring under pressure and *withdraw shipping pin.*



C Close lid by pushing all the way down. Bend tab over head of retaining pin.

Installed in a matter of seconds, ALCOLIDS are specifically designed to overcome all the usual journal box lid troubles and to provide a lifetime of service.

Wear on the eyes of the hood is eliminated because the square-headed, locked retaining pin never rotates. This also prevents loss of lids and—coupled with the fact that a sturdy torsion spring seals the fully articulated cover tight—prevents lid vibration.

To put all these advantages to work for *you*, send for complete information to your ALCO sales representative in New York, Richmond, Cleveland, Chicago, St. Louis, St. Paul, San Francisco.

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PATENTED
RAILWAY STEEL-SPRING DIVISION
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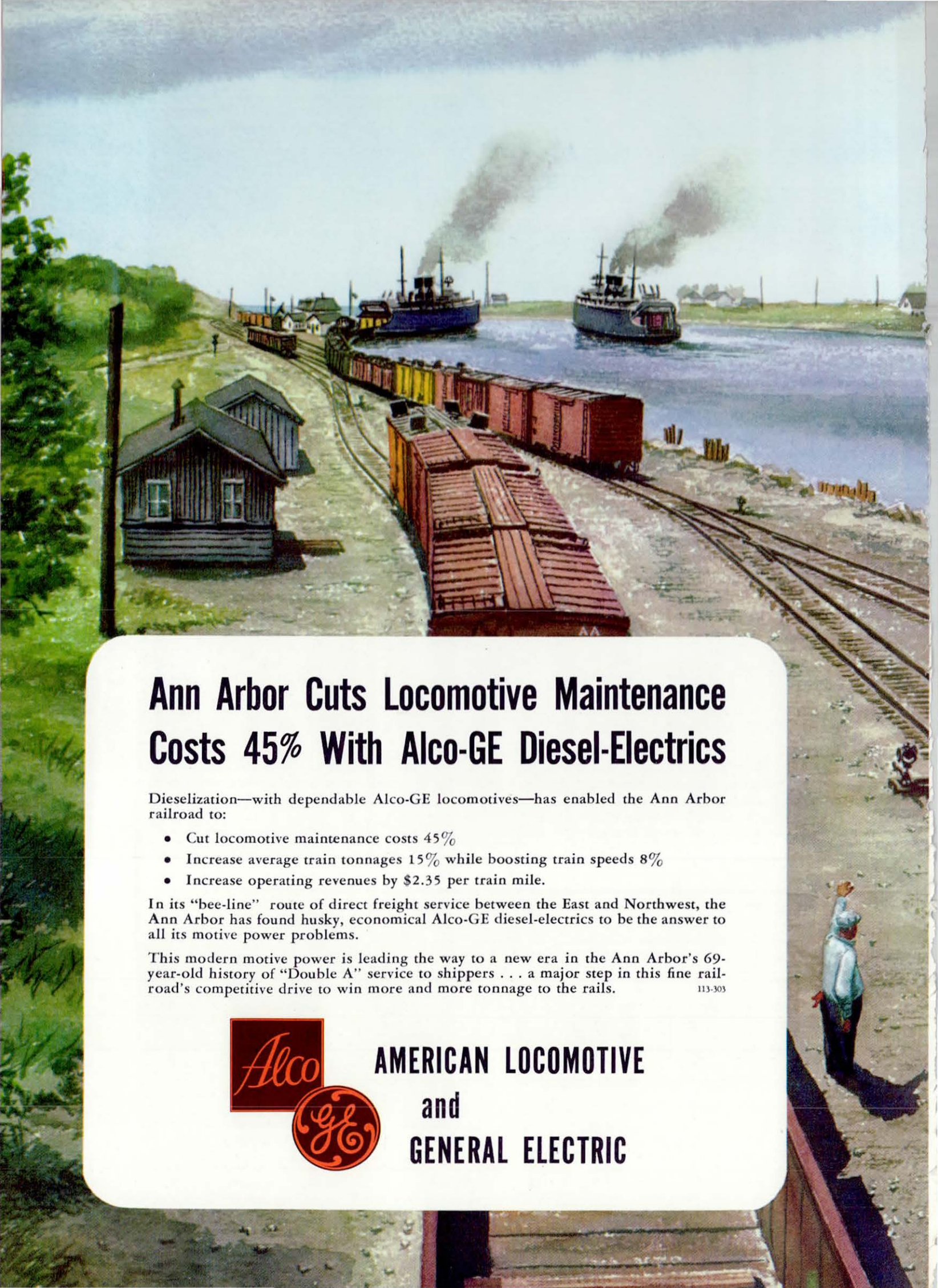


Ann Arbor Cuts Locomotive Maintenance Costs 45% With Alco-GE Diesel-Electrics

Dieselization—with dependable Alco-GE locomotives—has enabled the Ann Arbor railroad to:

- Cut locomotive maintenance costs 45%
- Increase average train tonnages 15% while boosting train speeds 8%
- Increase operating revenues by $2.35 per train mile.

In its "bee-line" route of direct freight service between the East and Northwest, the Ann Arbor has found husky, economical Alco-GE diesel-electrics to be the answer to all its motive power problems.

This modern motive power is leading the way to a new era in the Ann Arbor's 69-year-old history of "Double A" service to shippers . . . a major step in this fine railroad's competitive drive to win more and more tonnage to the rails. 113-303

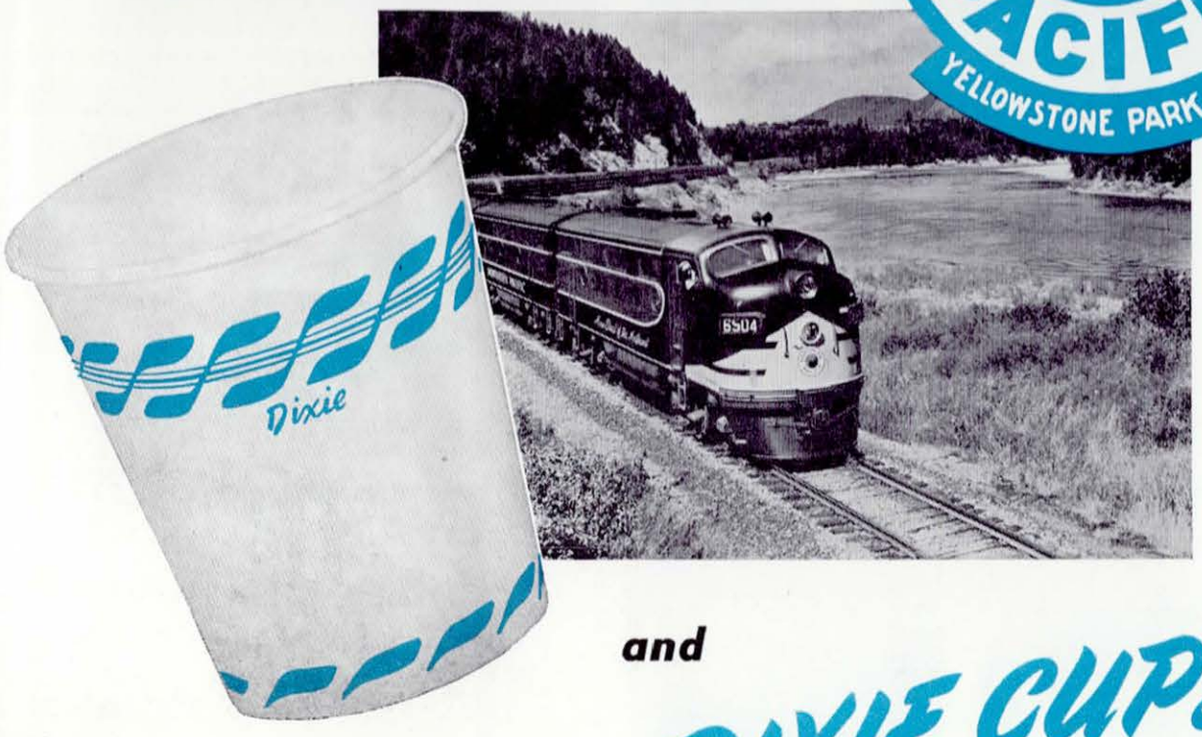
Alco GE

AMERICAN LOCOMOTIVE
and
GENERAL ELECTRIC

ANN ARBOR
51
ANN ARBOR RAILROAD

Two famous signs in Railroading . . .

The NORTHERN PACIFIC MONAD



and DIXIE CUPS

RECESSED DISPENSER

Gleaming satin-chrome finish. Fits flush with bulkhead. Assures flawless dispensing. Exclusive Dixie adaptors permit use of flat-bottom Dixies or cone-shaped vortex cups, large or small.

STREAMLINER

Trim, smart, easy-to-mount. Clear plastic window signals need for refill. Holds flat-bottom Dixies or cone-shaped Vortex cups, large or small.

Rail travelers constantly refer to the famous Northern Pacific "Yellowstone Park Line" as "the Main Street of the Northwest." The familiar monad on the Streamlined North Coast Limited signifies luxurious, 'on time' rail service through the scenic wonderlands between Chicago, the Twin Cities and the North Pacific Coast.

Offering passengers the best of everything . . . including world-famous Dixie Cups . . . is a long-standing tradition on the Northern Pacific. Yes, for years Dixie Cup service has been provided on the N.P. line, as it has on most of America's great railroads.

People everywhere know Dixie as the greatest name in paper cups . . . look for the name as an assurance of clean, safe drinking throughout their journey. You'll find modern Dixie equipment is available for every type of installation . . . and remember, *genuine Dixie Cups cost no more!*

Write Railroad Department

DIXIE CUP COMPANY

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Specially imprinted cups with your own insignia, slogan or message are available.

"Dixie" is a registered trade mark of the Dixie Cup Company.

STANDARD IN RAILROAD SERVICE FOR OVER 30 YEARS!

Beat In-Service Problems...

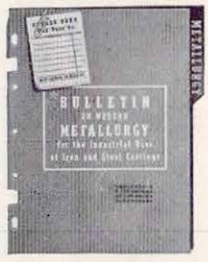
GUN IRON CAST PARTS

Emphasis, today, is on in-service economies, for two reasons: maintenance costs come high, and the critical need is to keep equipment on the job. And that's just one reason diesel manufacturers and operators in greater number are specifying Gun Iron for cast wearing parts. In thousands of applications, Gun Iron cast parts—superior in physicals—have demonstrated long life, PLUS lower operating costs.

Produced in air furnaces, "cooked" like open-hearth steel, Gun Iron has exceptional resistance to frictional wear, high heat, pressure, and erosion. Any of its many useful properties can be "pointed up" to meet your requirements exactly.

For diesel parts that are high in service life, low in service cost, investigate economical Gun Iron. You'll find our engineers and laboratory technicians ready and willing to help you discover Gun Iron's wide-margin advantage service-wise. **HUNT-SPILLER MANUFACTURING CORP., 379 Dorchester Ave., Boston 27, Mass.**

Canadian Representatives: Jos. Robb & Co., Ltd., 4050 Namur St., Montreal 16, P.Q.



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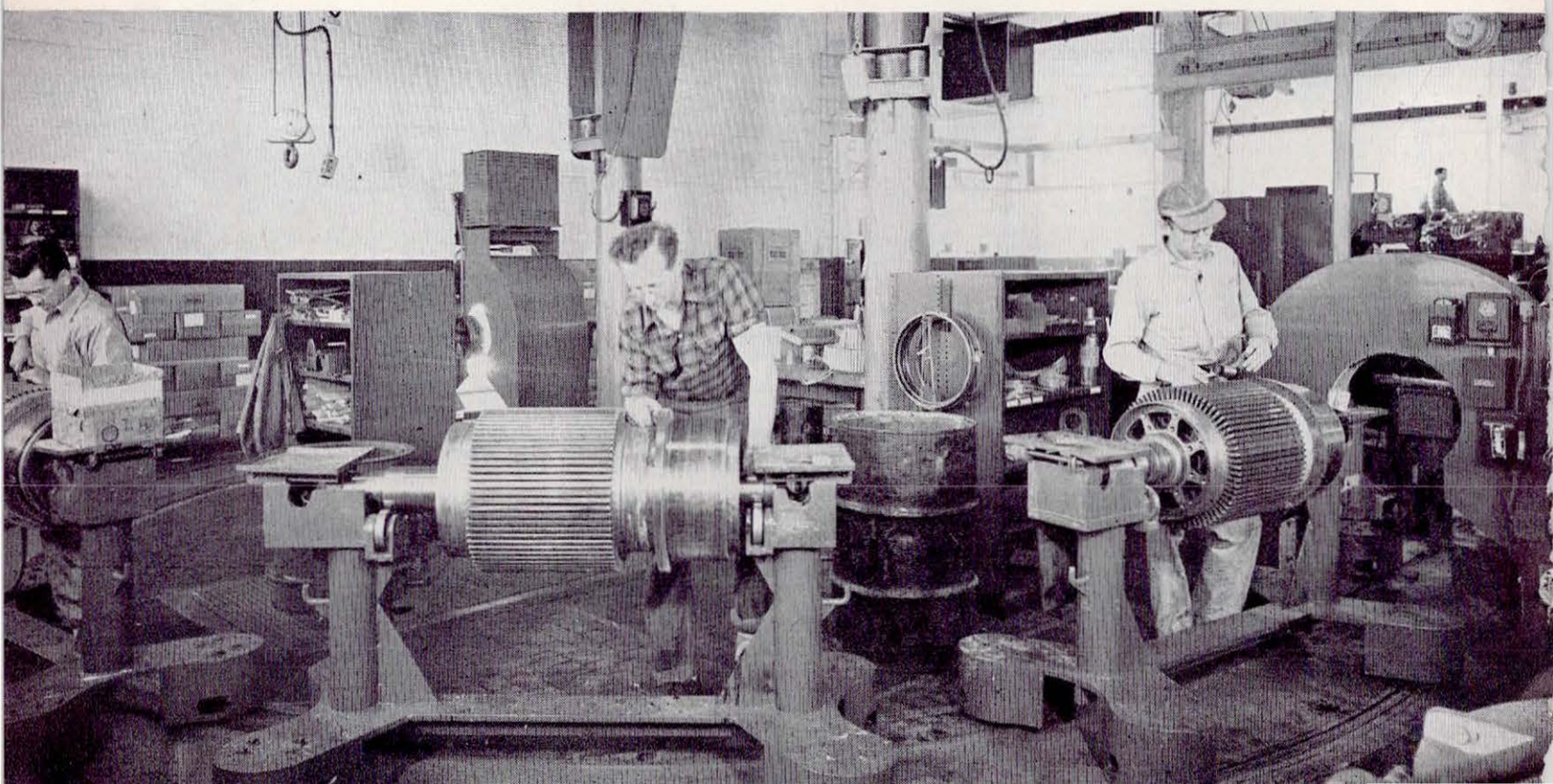
save $98.30*

on every traction motor armature rewind

...plus important savings on <u>all</u> Electro-Motive Rebuilds

* Result of Electro-Motive's recently announced reduction of 30% in labor charges for stripping and rewinding traction motor armatures. This reduction—plus a 10% cut in all other Electro-Motive flat-rate rebuilding labor charges—has been accomplished through an extensive retooling program which has converted our Factory Branches from job shops into production factories.



How Electro-Motive cuts your rebuilding costs

Repeated reductions in Electro-Motive flat-rate rebuilding prices—marked by the recent drastic cut in labor charges—are a source of savings every railroad executive should look into.

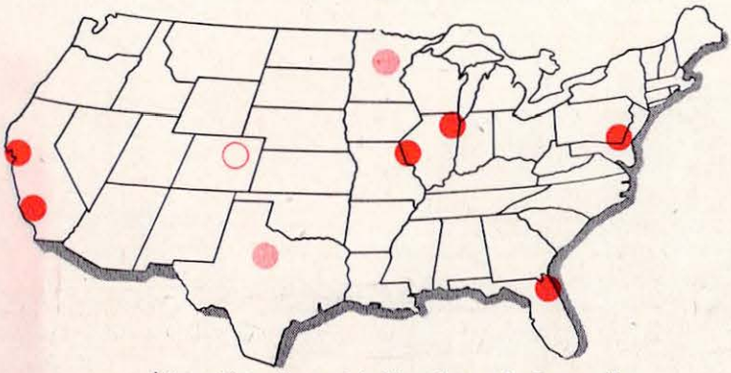
These savings—becoming effective during a period of inflation in other railroad operating costs—have been made possible by Electro-Motive's policy of bringing to *rebuilding* the same efficiencies and economies developed in original locomotive manufacture.

This has involved an extensive program of retooling and expansion in which our Factory Branches† have been completely transformed from job shops to assembly-line production-type operations.

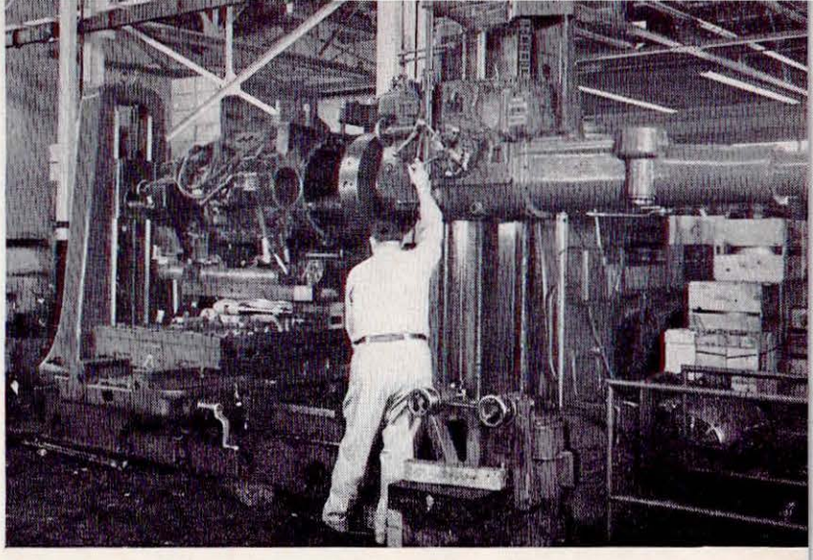
Here you see some of the efficient factory-type equipment installed in these plants. The latest laborsaving methods and techniques are used and are kept constantly up to date. Rebuilding is done in volume on a station-by-station basis. This means skilled workmen can be regularly employed to do specific jobs, and also that mass-production jigs, fixtures and tools can be economically justified. In addition, factory-type inspection and quality control enable us to give you a new-part guarantee on every assembly we rebuild.

Beyond this, and most important, each Electro-Motive Factory Branch is strategically located and equipped to handle the combined requirements of a number of railroads. This not only spreads fixed costs over a larger number of units, but also saves railroads the necessity of making major and unproductive investments in rebuilding facilities that would duplicate these. Finally, it enables railroads already operating facilities of their own to level out uneconomical peaks and valleys in production by letting Electro-Motive handle the overflow.

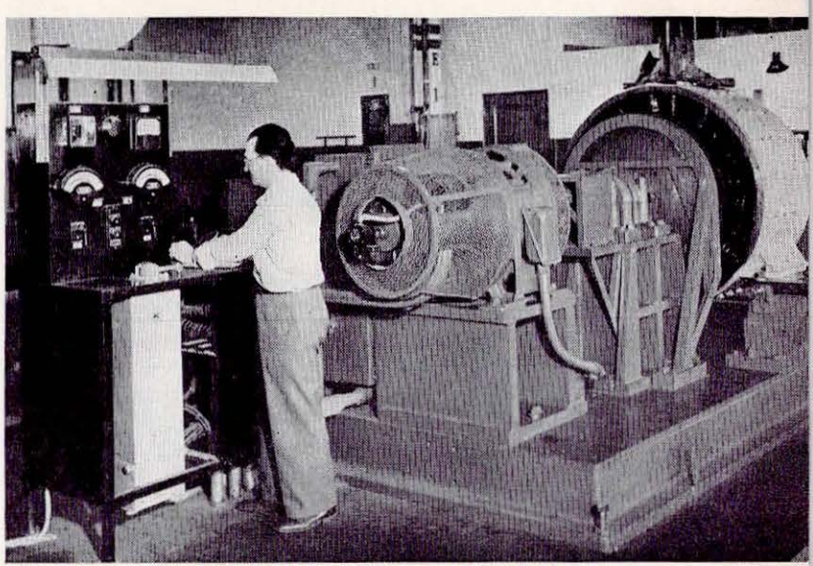
Thus—through its nationwide network of Factory Branches—Electro-Motive accepts responsibility to help railroads handle the volume of Diesel rebuilding that looms ahead. Our organization is geared to deliver top quality work at the lowest possible cost.



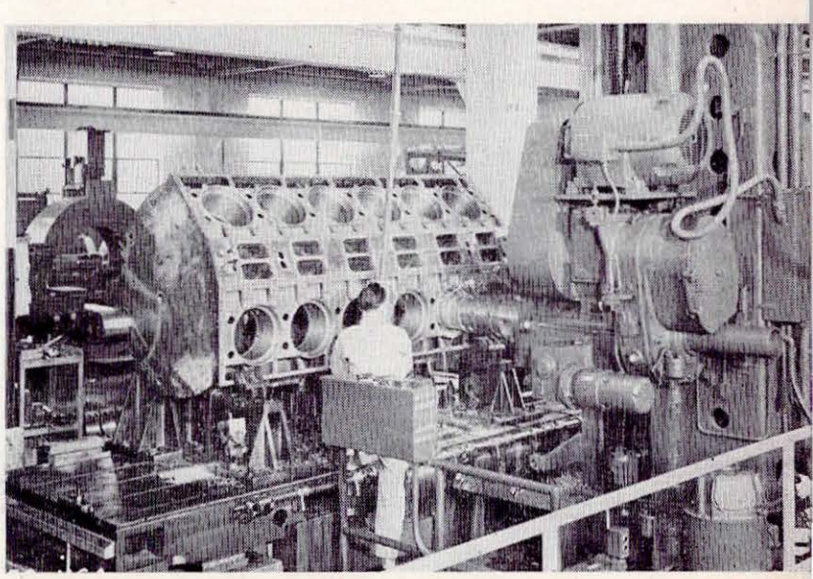
†Electro-Motive Factory Rebuilding Plants at La Grange, Ill.; Halethorpe, Md. (Baltimore); Jacksonville, Fla.; Robertson, Mo. (St. Louis); Los Angeles, Cal.; Emeryville, Cal. (Oakland). A seventh Factory Branch will be built at Salt Lake City, Utah. Branch Warehouses at Minneapolis, Minn. and Fort Worth, Texas.



We Spend—You Save—Machine tools like the one shown above are costly. This investment—and others like it—can only be amortized in a reasonable time through large volume operations. Machines such as this assure highest quality and cut time and costs—savings we pass on to you through lower prices.



Testing Guarantees Quality—Inspection of rebuilding jobs is just as careful and complete as the factory inspection given new production. This enables us to guarantee the rebuild the same as a new assembly. We "carry" this performance insurance for you—you get it as a free bonus on every job.



The Right Tools for Every Job—Our factory at La Grange and branches on both coasts are equipped to handle *any* rebuild job from unit injectors to crankcases and complete engines.

ass Production Saves You Money—This station-by-station armature inding line has cut our handling time by 50%. Seven separate perations are completed here with the armature riding on special ollies from station to station. There's no manual lifting—jib and oist take care of that, saving time and expense.

You write your own price ticket on E.M.D. "unit exchange"

"Unit Exchange" is Electro-Motive's name for a unique system of components replacement in which we swap you "new" for "old"—and charge only for rebuilding the latter. Briefly, here's how it works:

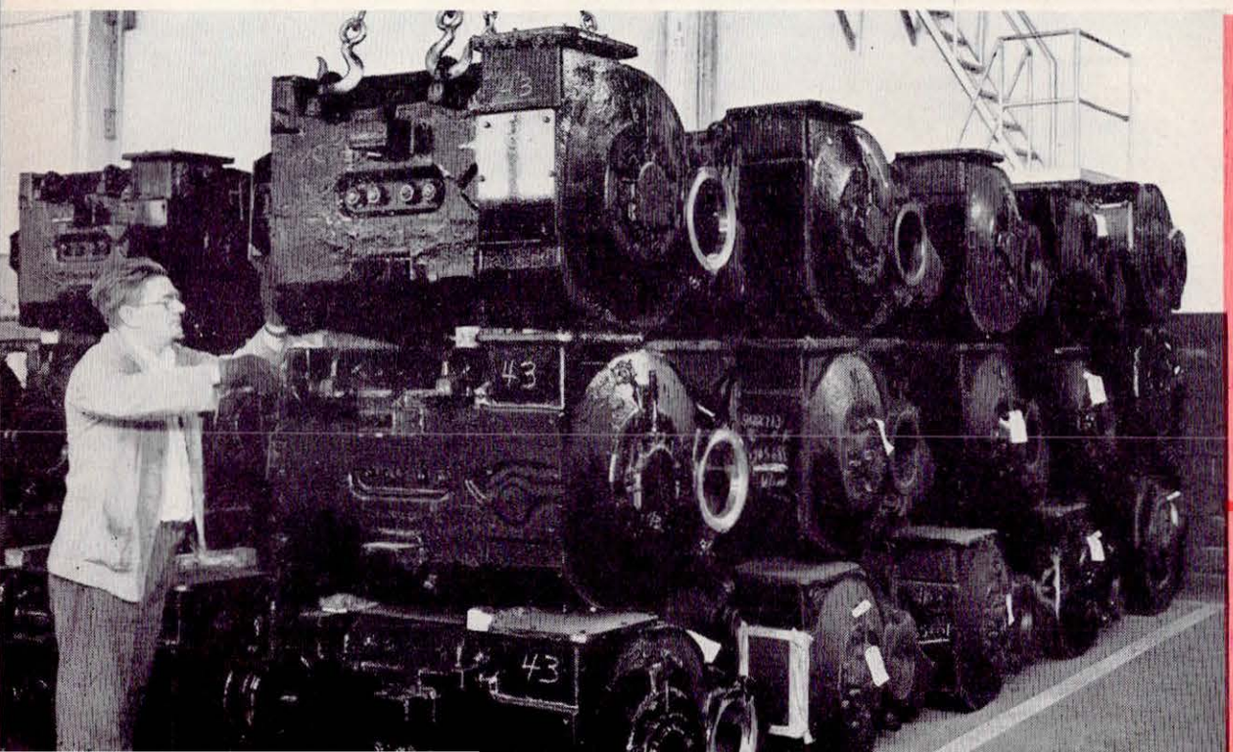
If a traction motor, generator, engine or other major Diesel locomotive component needs rebuilding, you simply order a "Unit Exchange" assembly and receive immediate shipment of a *completely rebuilt, fully guaranteed* unit—shipped F.O.B. our nearest Factory Branch. You can get factory-rebuilt motors overnight—and pay no premium for this service!

You return your old assembly for rebuilding and when it is brought up to our good-as-new standard, it goes into our pool ready for the next shipment.

The price you pay is determined solely by the material and labor needed to bring your old assembly to the same top-standard condition as the one you receive—exactly the same as if you send us the unit for Rebuild-and-Return. Your invoice is itemized to correspond with the job description and price list in our Factory Rebuild Catalog. The better your equipment is maintained, the less "Unit Exchange" costs you—*because you pay only for the rebuilding of your returned component.*

There are many advantages! You don't need to hold a locomotive out of service waiting for an assembly to be rebuilt. You get the same guarantee on "Unit Exchange" as on a brand-new assembly, with latest design improvements automatically incorporated. And, besides saving the investment in rebuilding facilities, *you can operate with smaller inventories*—save transportation costs—and keep your locomotives at work more hours per year.

Yes, you write your own price ticket on Electro-Motive "Unit Exchange." It's a bargain ticket that is already saving big money for a large number of railroads. And, with this latest reduction in Electro-Motive rebuilding costs, it will save you even more. Write us or consult your local EMD representative if you'd like more information.



We Carry The Spares—Factory-rebuilt traction motors and other General Motors Diesel locomotive components, stocked at La Grange and seven other strategically located points, are available for immediate shipment on "Unit Exchange." In most cases, delivery can be made in your shop within 24 hours.

Rebuild Factory—It takes a big investment in tools and facilities to equip a shop for *factory* rebuilding of major Diesel locomotive components. Look over this typical Electro-Motive Factory Branch and note the cranes, hoists, support stands and other special equipment we've installed to handle rebuilds on a production-line basis.

...and look at the savings you make with Electro-Motive's latest labor price reductions:

FLAT-RATE LABOR PRICES

	NEW PRICE	OLD PRICE	SAVINGS
Traction Motor Basic	$ 203.40	$ 226.00	$ 22.60
Armature only—Basic	50.40	56.00	5.60
Armature Strip and Rewind	216.30	309.00	92.70
D17B to D27B Conversion	331.20	368.00	36.80
Combined Frame Bore Machining	44.10	49.00	4.90
D12-D14 Main Generator Basic	$ 662.22	$ 735.80	$ 73.58
Armature Strip and Rewind	1,015.39	1,128.21	112.82

	NEW PRICE	OLD PRICE	SAVINGS
Auxiliary Generator Basic	$ 78.84	$ 87.60	$ 8.76
Armature Strip and Rewind	101.93	113.25	11.32
A.C. Fan Assembly Basic	$ 37.26	$ 41.40	$ 4.14
Stator Rewind	40.70	45.22	4.52
567 Cylinder Liner Rebore	$ 6.08	$ 6.75	$ 0.67
567 Engine Blower Basic	$ 67.91	$ 75.46	$ 7.55
567 Injector	$ 1.80	$ 2.00	$ 0.20

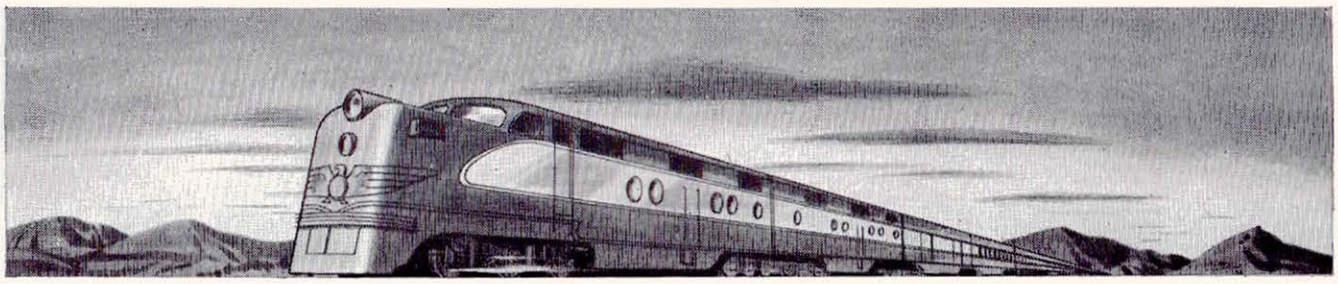
Electro-Motive continues its policy of passing on to customers the benefits derived from technological developments and volume production.

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS

La Grange, Illinois • Home of the Diesel Locomotive

Motorola 2-Way Radio
Covers the "Mopac"
Umbrella Coverage
—of the vast 10,000 mile "Mopac" System
with modern, full-facility radio communications
further establishes Motorola 2-way radio as one of
the greatest railroad tools of the 20th century . . . matching
the near 100% availability and reliability
of the diesel locomotive.
MORE THAN 45 AMERICAN RAILROADS



...and has given excellent operation and maintenance performance!

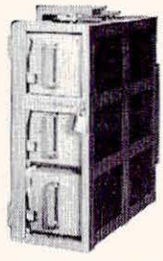
As a two-fisted railroad tool that can slug it out on a long run and come up for more, Motorola 2-way radio exceeds even "Mopac's" hefty demands.

Here, in the Universal Sensicon line, "Mopac" finds the utter reliability it demands. The Permakay-Sensicon sealed unit operation backs up the Motorola guarantee of permanent-selectivity with an extra bonus of low-cost operation. "Mopac" is actually getting *years-ahead* performance *today* . . . and with this obsolescence-free equipment, is assured a wide margin of investment-security for years to come.

"Instant radio communication saves time and money along every mile of your right-of-way."

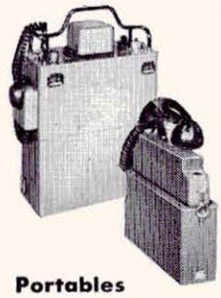
Any or all of these functions can be quickly applied on your railroad to promote further efficiency, to protect schedules, to effect profit-making economies.

- **YARD-AND-TERMINAL**
- **END-TO-END**
- **TRAIN-TO-TRAIN**
- **TRAIN-TO-WAYSIDE**
- **WAYSIDE-TO-WAYSIDE**
- **CAR CHECKING**



The "Universal"
With either horizontal or vertical racks to AAR specifications.

The "SENSICON" Uni-channel
Highly mobile and efficient 2-way dispatching units for auto or RR cab mounting.



Portables
Hand or back carried for car checking and many local assignments.

Motorola®

Specialists AND WORLD LEADERS IN 2-WAY RAILROAD RADIO

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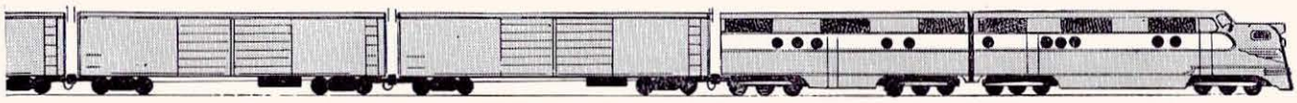


ARE NOW USING MOTOROLA 2-WAY RADIO

Always an operating hazard—and a constant drain on the maintenance budget—rust is a doubly dangerous enemy now when it is difficult to obtain metal replacements.

RUST-OLEUM stops rust effectively—is the practical answer to many railroad rust problems. Its tough, pliable, rust-resisting film gives excellent protection to bridges, rolling stock, metal buildings, signal equipment, tanks and many other rustable metal surfaces.

CUT YOUR MAINTENANCE COSTS

RUST-OLEUM cuts maintenance costs in two ways. (1) It prevents rust on new rustable metal surfaces so that costly replacements can be deferred longer than previously could be expected. (2) Because RUST-OLEUM can be applied *even* over metal already rusted—usually without sandblasting or the use of chemical rust removers—it saves many, many man hours. *Write for your copy of the NEW RUST-OLEUM Railroad Catalog.*

RUST-OLEUM CORPORATION

2595 Oakland Street, Evanston, Illinois

Fairmont

RAILWAY MOTOR CARS
AND WORK EQUIPMENT

..... when you do it with a FAIRMONT—you do it better, faster and more economically!

Performance ON THE JOB COUNTS

The statement made in this headline applies to virtually every phase of railway maintenance—and to every piece of equipment that Fairmont produces. But it is *doubly* true of the W77 Series A Ballast Maintenance Car pictured above. For here, beyond any question, is the finest solution the industry has yet developed for this ever-present problem. By mounting scarifiers, discs, ballast equalizing boxes, two sizes of blades and a center plow, the W77 Series A Ballast Maintenance Car provides the fastest, finest and most economical method of maintaining road-bed ballast available today. Its masterful 112 h.p. engine, with its eight speeds and its two-way, four-wheel drive, guarantees dependable and brilliant performance under almost any operating conditions. This remarkable Fairmont product is positive proof that Fairmont builds to perform where performance really pays off—*on the job!*

FAIRMONT RAILWAY MOTORS, INC., FAIRMONT, MINNESOTA

MANUFACTURERS OF INSPECTION CARS, SECTION AND GANG CARS, HY-RAIL CARS, MOTOR CAR ENGINES, PUSH CARS AND TRAILERS, WHEELS, AXLES AND BEARINGS, MOWERS, BALLAST MAINTENANCE CARS, WEED BURNERS AND EXTINGUISHER CARS, DERRICK CARS, OIL SPRAY CARS, GROUTING OUTFITS, WEED SPRAY CARS, TIE SPRAYERS, TIE REMOVERS, TIE INSERTERS

Utilizing nickel-containing alloys, this star performer of the Baldwin-Westinghouse line of locomotives, made by Baldwin-Lima-Hamilton Corporation, is now more powerful than ever . . . 1600 hp per unit available for traction with full power output ensured up to 8000′ altitude. Scores of other features also help this locomotive give a big return on the investment.

New Baldwin-Westinghouse Multi-Unit Road Freight Locomotive

DEVELOPS INCREASED POWER

for Extra Performance

WITH THE HELP OF NICKEL-CONTAINING ALLOYS

Increased tractive effort . . . ability to handle heavier loads . . . smoother, easier operation and less maintenance . . .

These and other important "*extras*" stem from basic changes in *design, materials* and *manufacturing methods* used to produce the new type Baldwin-Westinghouse RF-16 multi-unit Diesel Electric Locomotives.

Components designed to take advantage of the high mechanical properties afforded by nickel alloy steels include wrist pins, cam rollers, inlet and exhaust valves. Liners and heads are cast in nickel iron, and the superchargers utilize Ni-Resist and chromium-nickel austenitic stainless steel. Car body framing is of high strength low alloy steel, and throughout are scores of miscellaneous nickel-alloyed iron and steel components.

Additions of nickel to iron and steel permit reducing bulk and deadweight of fabricated parts without sacrificing strength or safety. Send us details of your problems for our suggestions. Write us, today.

At present, most of the nickel produced is being diverted to defense. Through application to the appropriate authorities, nickel is obtainable for the production of engineering nickel alloy irons and steels for many end uses in defense and defense supporting industries.

EMBLEM OF INCO SERVICE

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET NEW YORK 5, N. Y.

For trouble-free bearing performance between motor overhauls

MAGNUS High Mileage TRACTION MOTOR SUPPORT BEARINGS

Mechanical and operating men know that traction motor support bearings are an important factor in today's trend to *higher mileage* between overhauls. They know, too—from years of experience—that putting cost-saving extra miles into precision bearings is a real art with Magnus.

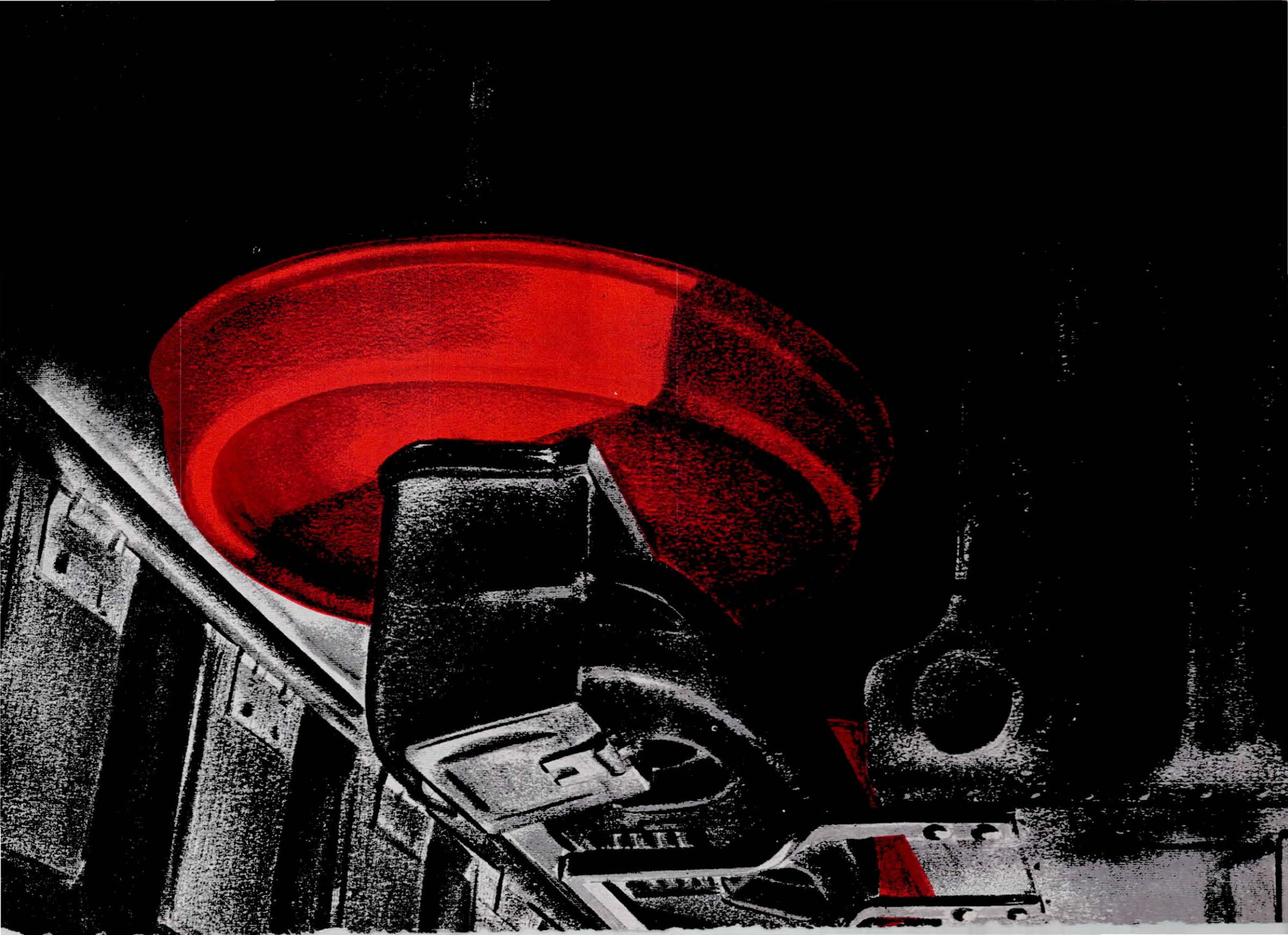
That's why more and more railroads from coast to coast are equipping their Diesel locomotives with longer-lasting Magnus HIGH MILEAGE Traction Motor Support Bearings—and setting new records for trouble-free bearing performance between motor overhauls.

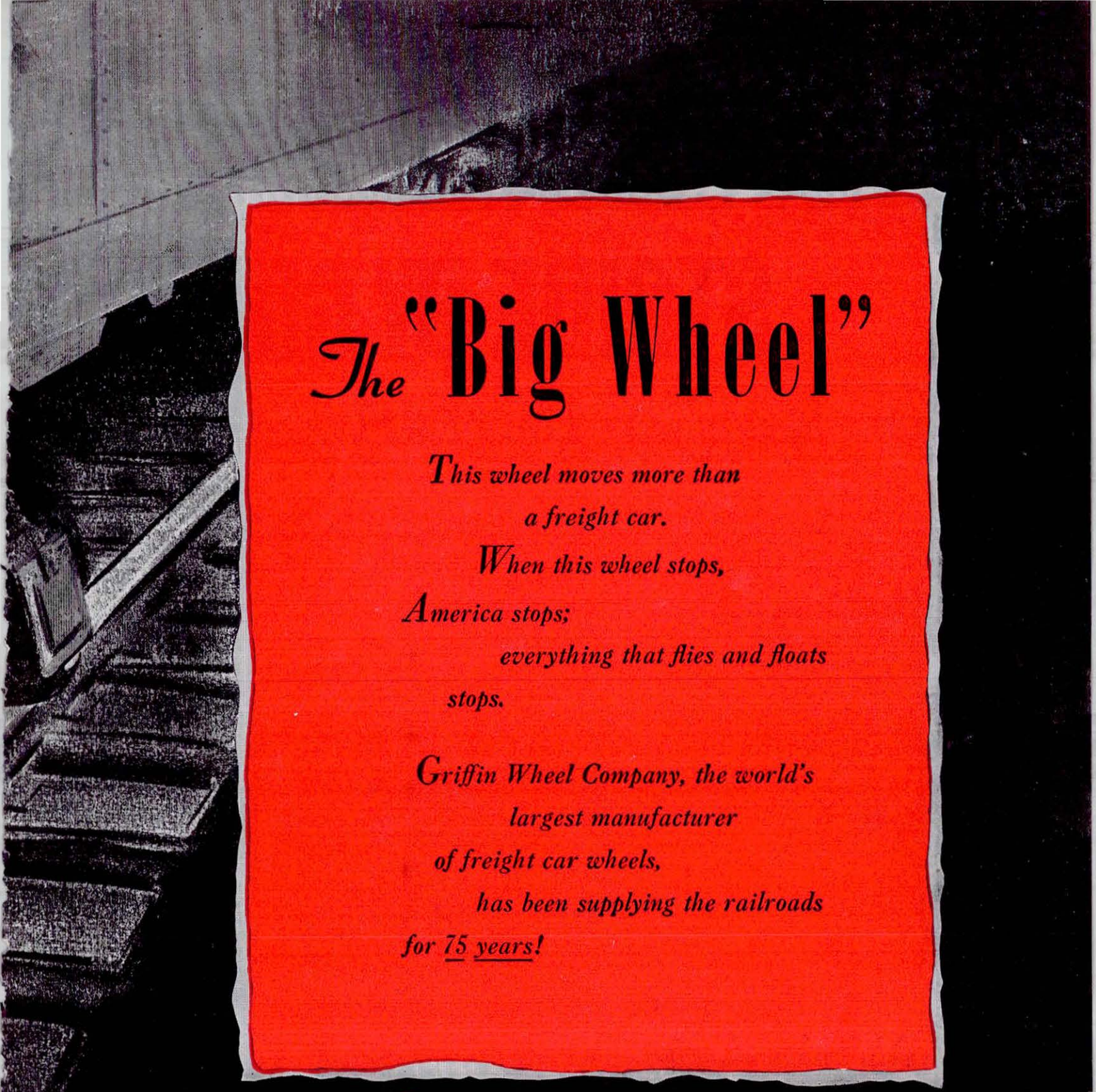
These fine, precision-built bearings are now available for replacement on *every type and make* of Diesel Electric and Electric Locomotives and "MU" Cars. You'll find a few of their outstanding features listed below.

- **SATCO LINING METAL** — gives greater resistance to wear and load, with stronger bonds and increased hardness at elevated temperatures.
- **INTERCHANGEABLE DOUBLE KEYWAY** — cuts stock requirements, simplifies maintenance. Bearings can be used on either the commutator or pinion end of shaft.
- **IMPROVED FLANGE FILLET PROFILE** — prevents "feathering" of lining metal and makes it impossible for Magnus bearings to "ride" the fillet.
- **PERFECTLY MATED BEARING HALVES** — paralleled ID and OD assured by final micrometer test of *each* bearing under load.

FOR COMPLETE INFORMATION get your free copy of Bulletin No. 6000. Just write a post card or letter to Magnus Metal Corporation, 111 Broadway, New York 6, N. Y., or 80 East Jackson Blvd., Chicago 4, Ill.

MAGNUS METAL CORPORATION
Subsidiary of NATIONAL LEAD COMPANY





The "Big Wheel"

This wheel moves more than
a freight car.
When this wheel stops,
America stops;
everything that flies and floats
stops.

Griffin Wheel Company, the world's
largest manufacturer
of freight car wheels,
has been supplying the railroads
for 75 years!

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Member AACW ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

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COAST LINE R.R. TAKES STRIDE BY GOING

Equips 946 cars with TIMKEN® tapered roller

HOW "ROLLER FREIGHT" GIVES SHIPPERS FASTER, BETTER SERVICE—"ON-TIME" DELIVERY

1. Passenger train speeds
2. No "hot boxes"
3. 88% less starting resistance
4. Increased car availability
5. 90% less terminal inspection
6. Fewer jolts and jars

Watch the railroads Go . . . on

ANOTHER BIG FORWARD "ROLLER FREIGHT"

bearings to speed service, reduce operating costs

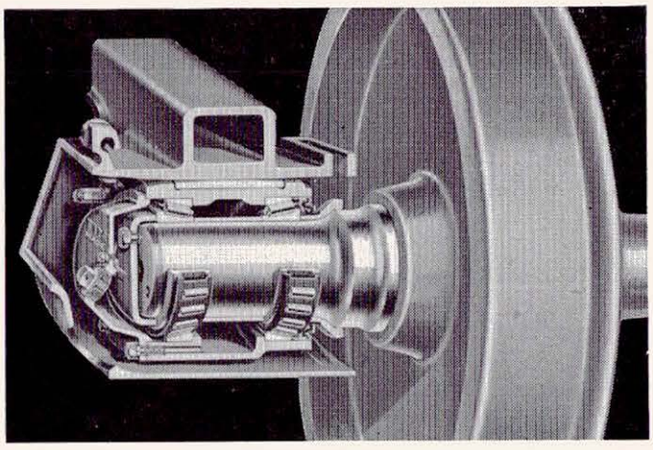
"Coast Line is convinced of the efficiency and economy of roller bearings for freight cars . . .", said Mr. C. McD. Davis, President, Atlantic Coast Line Railroad Company, in an address before The New York Society of Security Analysts, December 18, 1951.

As an important step in its continuing program to improve freight service, Atlantic Coast Line has equipped 946 freight cars with cartridge mounted Timken® tapered roller bearings. These include 400 new covered hopper cars built by American Car and Foundry, 500 new pulpwood cars built by Pullman Standard, 21 covered hoppers and 25 pulpwood cars converted to Timken roller bearings in the ACL's own shops.

This 946-car "Roller Freight" fleet is part of Coast Line's program to offer shippers a new high in fast, dependable service. Since Timken roller bearing journals seal out dirt and moisture and because there is no waste to "grab", "hot box" delays are eliminated giving ACL shippers greater assurance of on-time delivery. In addition Timken bearings open the way to faster sustained speeds.

Timken bearings cut operating costs because they require 90% less time for terminal inspection, increase freight car availability and cut lubricant costs.

"Roller Freight" is the latest forward-looking step taken by the Atlantic Coast Line to improve freight service and cut costs. When all railroads switch to "Roller Freight" they'll earn an estimated 22% on their investment. For complete details write The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".



NOT JUST A BALL ◯ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭

BEARING TAKES RADIAL ↕ AND THRUST →←

TIMKEN *Tapered Roller Bearings*

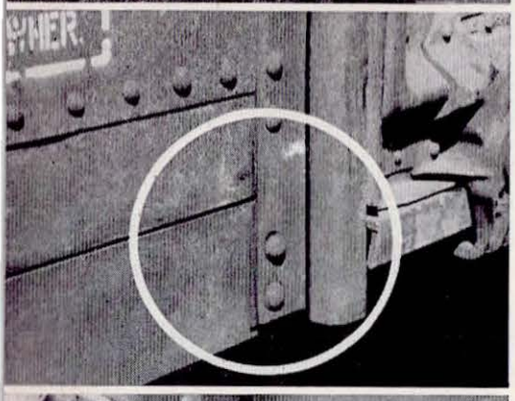
TRADE-MARK REG. U. S. PAT. OFF.

End Plate Buckling.

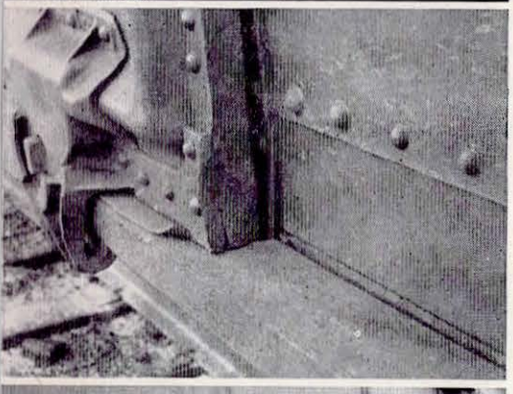
THERE'S A

International

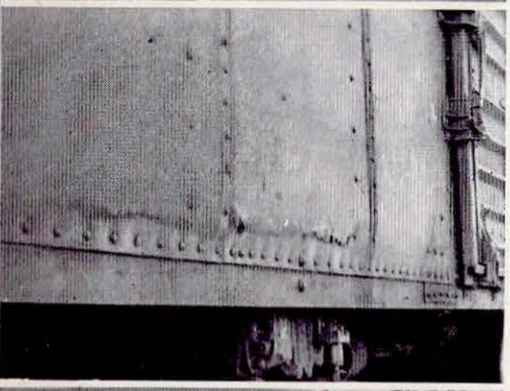
NEW PRECISION IN FREIGHT CAR CONSTRUCTION



Fracture and Progressive Separation at Door Post.



Separation between Side Sill and Reinforcement. Note buckling due to flexing—greatest separation at door post.



Floor Line Corrosion. Due to riveted multiple-piece construction allowing moisture entry and infestation harbor. Note "half sole" (in lower photo) necessitated by floor line corrosion.

The illustrations on this page show the results of conventional freight car construction. Starting with these *results,* International Steel's specialized research program has been pointed *backward* to discover *causes.* By understanding causes (weaknesses), and by engineering corrective design, new *precision* construction principles have been developed.

Thus A.A.R. Committee findings and recommendations are not only met, but have been subjected to a *continuing study;* and the *spirit, as well as the specifications* of such A.A.R. findings have been put into metal.

But the achievement is not merely a new precision in design and construction; nor is it alone a magnificent new car, stronger, more rigid and longer-lived. Such improvements are immediately self-evident. *What International Steel HAS wrought can be told only in the final analysis of —*

1. **AMOUNT of expenditure for maintenance of *maximum availability of highest grade equipment* and**
2. ***FREQUENCY* of expenditure for major renewal or replacement of such equipment.**

The actual achievement, then, is LOWER COST TO PRODUCE NET-TON MILES.

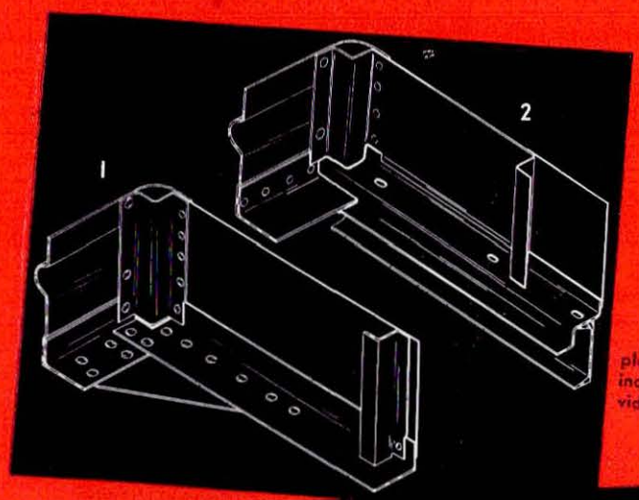
(Many details of construction—INCLUDING structural advantages due to improved underframe design—do not adapt themselves to photographic description. Please note the drawings carefully.)

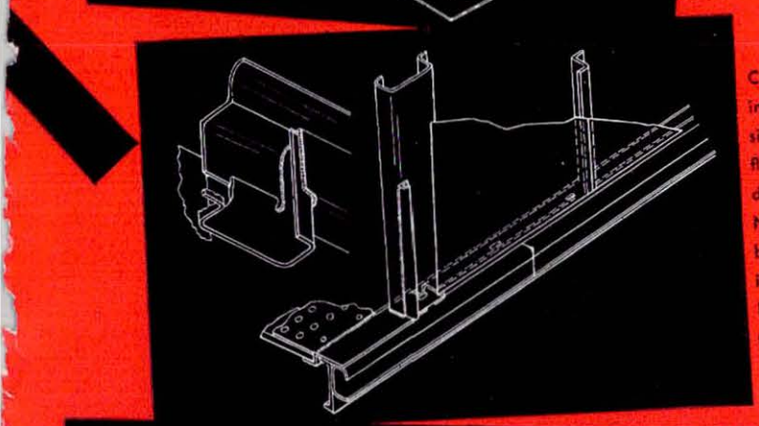
Steel

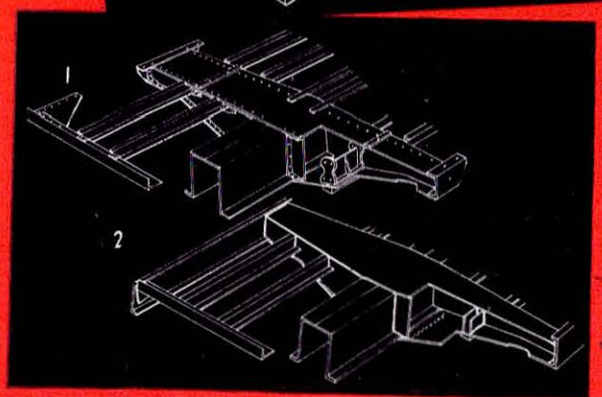
RAILWAY DIVISION — EVANSVILLE 7, INDIANA

COMPARE CONSTRUCTION FEATURES

The illustrations on this page show the results of corrective design and precision construction. Note the shortened span of the heavier gauge (3/16") end side plate and welded construction to eliminate moisture entry points and infestation harbors. Note also the *continuous (car-length) channel side sill which is part of the underframe;* and that the upper element of the side sill becomes a part of the sidewall.







1 Conventional Corner Post and End Panel Construction.

2 *International Steel's* corrective design. Note the heavier end side panel of 3/16" plate replacing the conventional .10 inch sheet. Note also that this shorter span plate incorporates the "W" section corner post as well as the first intermediate post and provides substantial anchoring of the end.

Continuous Side Sill construction and Side Plate Reinforcement at Doorway. Note that intermittent fillet welding and welding in slots joins continuous, un-notched side sill to underframe; that need for a separate threshold plate is eliminated and a flange is supplied for application of uniform-length flooring, renewable without disturbing the side lining. Application and maintenance of grain bevel is eliminated. Note also the panel door post (available in modified design with lading strap anchor bar if desired) providing increased resistance to bowing; increased area and rigidity of attachment to side sill and side plate as well as increased stability of door lock and edge stop applications. The side plate door header reinforcement is the key to increased structural strength at the doorway in the side structure "girder assembly."

1 End section of Conventional Underframe.

2 Same section of *International Steel's* corrective design. The center sill sections are welded continuously on top, for eight feet back from each end and at each cross-member underneath. Note the tapered section body bolster with continuous top and bottom cover plates from side sill to side sill and web plates set near the edges for maximum utilization of material section. The box section cross-bearers are of maximum depth; floor stringers and cross ties are deeper also—rigid vertical attachment. The section shown forms a rectangular lateral "truss" rigidly integrating body bolster, side sills, and sill and floor stringers by welding. This is *International Steel's corrective design* to eliminate the tendency of the center sill to "float" in relation to the body bolster.

All of the load—static and dynamic—as well as the forces of acceleration and deceleration are transmitted through the center plates and center filler. There is vast evidence of failure of these components. The A.A.R. Car Construction Committee report to the 1950 Annual Meeting showed a high prevalence of center sill fracture and weld failure. Details of *International Steel's* corrective design construction and integration of these components of the underframe are available upon request.

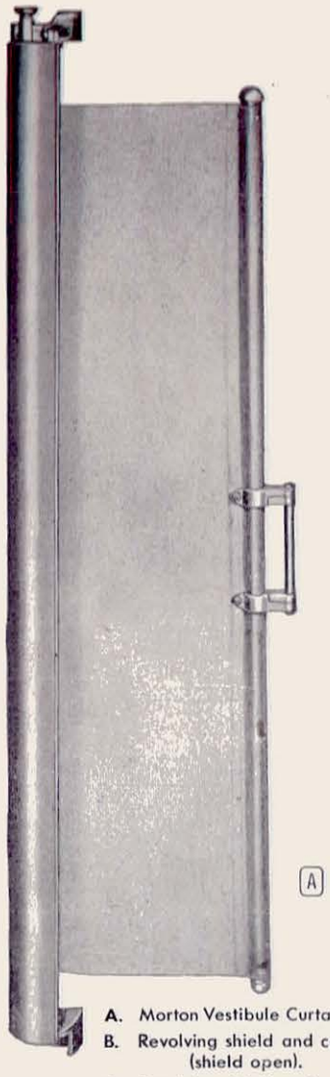
MORTON

Vestibule Curtains have stood every test for 50 years!

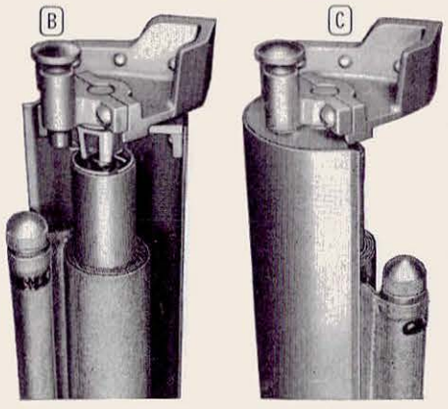
. . . a complete line to meet every need — including yours

CHECK THESE FEATURES

- **ROLLERS.** Long, strong spring of toughest spring steel. Roller barrel of cold-rolled steel tubing, welded and swaged. Available in adjustable and non-adjustable types, grooved or plain, with or without snap-button holes. Painted.
- **CURTAIN MATERIAL.** Any designated type of material or color can be provided.
- **HANDLES.** Designed for easy application to, or removal from, curtain rod. Release handles supplied if specified.
- **REVOLVING SHIELD and CASING** (illustrated at right). When opened, it gives quick access for installation or repair; when in normal closed position, it presents an attractive appearance.
- **SNAP-BUTTON FEATURE.** Should cars be uncoupled before curtain is unhooked, the snap buttons which hold curtain to roller become disengaged by the extra "pull," preventing damage to curtain. Buttons are easily re-snapped to roller.
- **HOOKS.** Malleable curtain hooks (single, double or roller type) can be furnished to any specification.
- **BRACKETS.** Various types of brackets of simplified design available for any condition of application.



A. Morton Vestibule Curtain outfit.
B. Revolving shield and casing (shield open).
C. Revolving shield and casing (shield closed).



When you buy vestibule curtains for passenger trains, *by all means specify* MORTON *Vestibule Curtains!*

MORTON
MANUFACTURING COMPANY
5125 West Lake Street, Chicago 44, Illinois

MAKERS OF: OPEN-GRIP RUNNING BOARDS AND BRAKE STEPS • KASS SAFETY TREAD • VESTIBULE DIAPHRAGMS AND CURTAINS • METAL DOORS • STEEL FLOORING . . . AND A WIDE LINE OF PRODUCTS FOR RAILROAD USE

U·S·S WROUGHT STEEL WHEELS and AXLES

Unsurpassed for long, dependable performance

U·S·S WROUGHT STEEL WHEELS AVAILABLE

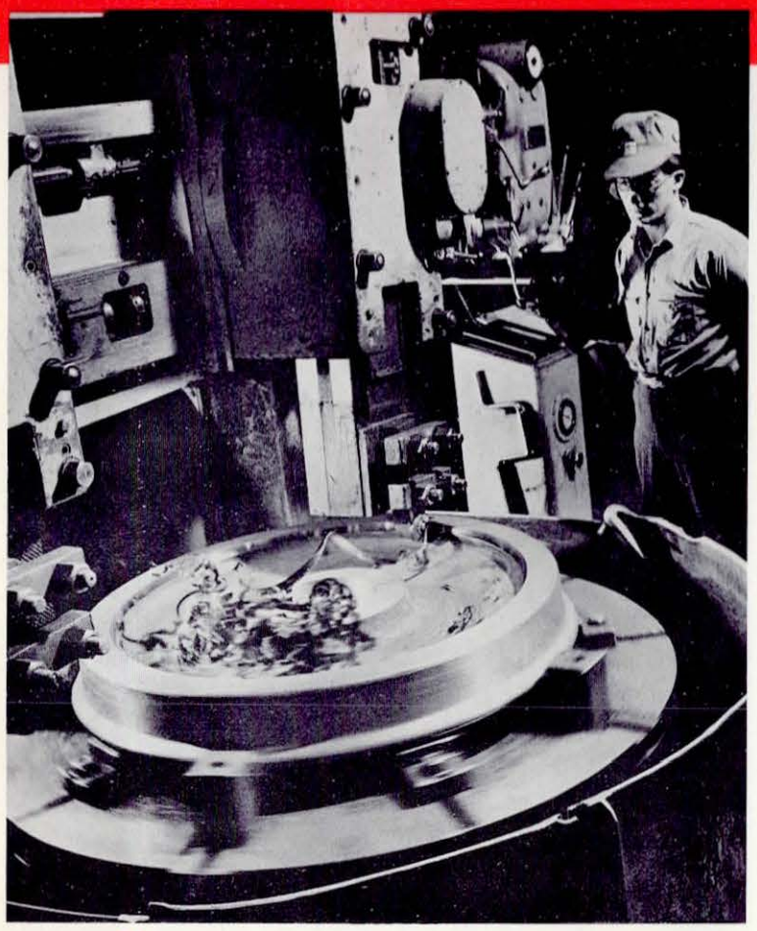
- Diesel Locomotive Wheels
- Electric Locomotive Wheels
- Steam Locomotive Wheels
- Passenger Car Wheels
- Multiple-Wear Freight Car Wheels
- One-Wear Freight Car Wheels
- Tender Truck Wheels
- Electric Transit Wheels
- Crane Track Wheels

USS TRADE MARK

UNITED STATES STEEL COMPANY, PITTSBURGH · COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

UNITED STATES STEEL

U·S·S WROUGHT STEEL WHEELS



On modern high-speed equipment like this, wheels are accurately machined to specified tolerances. In both our wheel-making plants, the skill of experienced personnel is supplemented by machinery and facilities of an advanced design.

THE HEAVIER LOADS now carried, the greater distances traveled, and the fast speed at which railroad equipment must move today have put a premium on wheel durability and safety.

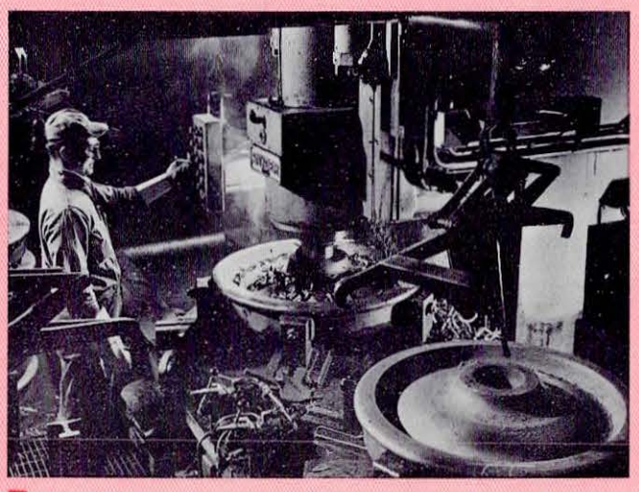
U·S·S Wrought Steel Wheels have built into them the ability to endure severe braking action required of today's high speeds.

Desirable characteristics of U·S·S Wrought Steel Wheels are obtained by combining 47 years of wheel-making experience with careful control of every step of manufacture from the melting of the steel to the finished product. Not only are our wheel shops equipped with modern heat treating, forging and machining facilities, but they are manned by seasoned personnel who have brought the art of wheel making to its present high level.

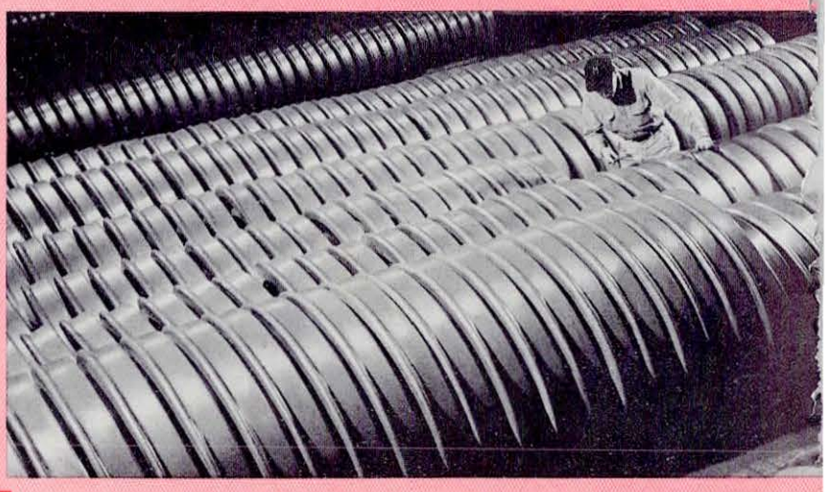
U·S·S Wrought Steel Wheels are produced from an ingot that is *rolled* into a round before being forged. This operation contributes to the over-all wheel quality.

U·S·S Multiple-Wear Wrought Steel Wheels

United States Steel Company produces Multiple-Wear Wrought Steel Wheels for all types of railroad applications including diesel locomotives, electric locomotives, steam locomotives, passenger cars, express cars and freight cars. These *high-duty* wheels are furnished to AAR and ASTM specifica-



Wheel hubs are rough bored slightly under the finished bore, or are finished bored to customer specifications, on this recently developed semi-automatic wheel boring mill—the last word in speed and precision.



A careful check of essential dimensions is the final inspection step that makes sure that U·S·S Wrought Steel Wheels meet customers' specifications.

For maximum mileage under heavy loads and high speeds

tions either untreated or heat treated. When heat treatment is specified, they can be furnished rim toughened or oil quenched. Rim toughened wheels are recommended for most railroad services where heat treatment is desired.

U·S·S One-Wear Wrought Steel Wheels

Designed exclusively for freight car service, U·S·S One-Wear Wrought Steel Wheels are manufactured under the same careful control and by the same wheel-making techniques that are employed in producing our multiple-wear wheels. Their ability to deliver long mileage under severe operating conditions has been amply demonstrated. Long years of service on 91 railroads and 68 private lines have proved that on the basis of cost-per-thousand-miles they are preferable.

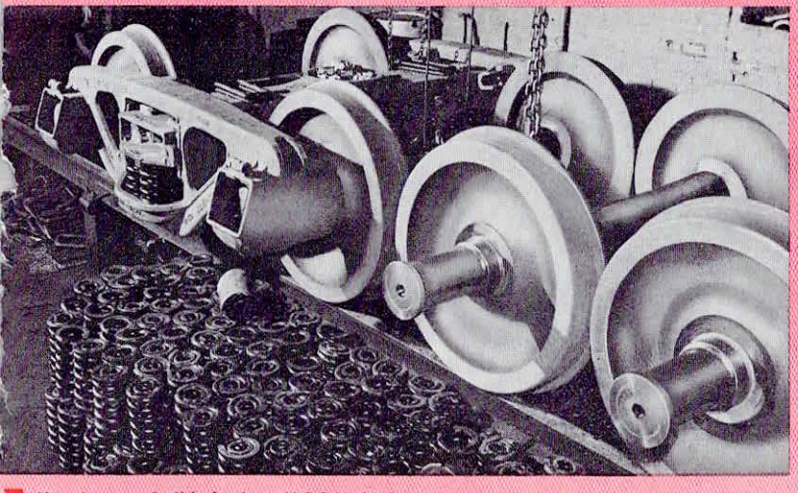
• • • • • •

Available from two strategically located plants

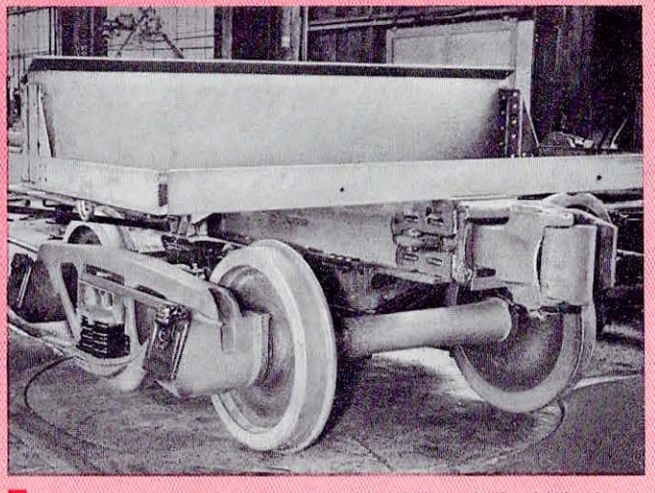
U·S·S Wrought Steel Wheels for every railroad service are produced in two completely equipped wheel-making plants well located for availability by all customers. One at McKees Rocks (Pittsburgh), Pennsylvania, serves the railroads of the East and Southeast; the other at Gary, Indiana, supplies Western and Southern roads. No other manufacturer of wrought steel wheels offers you service like this.

U·S·S WROUGHT STEEL WHEELS FOR RAILROAD SERVICE

DESCRIPTION	SECTION NUMBER	DIAMETER	TYPE
Diesel Locomotive Wheels	H33	33″	Multiple Wear
	F36	36″	Multiple Wear
	A40	40″	Multiple Wear
	C42	42″	Multiple Wear
Steam Locomotive Wheels	C36	36″	Multiple Wear
	A38	38″	Multiple Wear
	B42	42″	Multiple Wear
Tender Wheels	C33	33″	Multiple Wear
	D33	33″	Multiple Wear
	E33	33½″	Multiple Wear
	G33	33″	Multiple Wear
	A36	36″	Multiple Wear
	B36	36″	Multiple Wear
	D36	36½″	Multiple Wear
	E36	36″	Multiple Wear
	B42	42″	Multiple Wear
Passenger Car Wheels	C33	33″	Multiple Wear
	D33	33″	Multiple Wear
	A36	36″	Multiple Wear
	B36	36″	Multiple Wear
	D36	36½″	Multiple Wear
	E36	36″	Multiple Wear
	G36	36″	Multiple Wear
Freight Car Wheels	A30	30″	Multiple Wear
	A33	33″	One Wear
	B33	33″	One Wear
	C33	33″	Multiple Wear
	D33	33″	Multiple Wear
	G33	33″	Multiple Wear



Here in a car builder's shop, U·S·S Multiple-Wear Wrought Steel Wheels are on their way to installation on a 70-ton hopper car. The better performance for which these wheels are noted, determined their choice for this 5,500 car order.



On the erection track. The ability of U·S·S Wrought Steel Wheels to deliver long-mileage service makes them a perfect match for extra-rugged hopper car bodies built of U·S·S COR-TEN Steel.

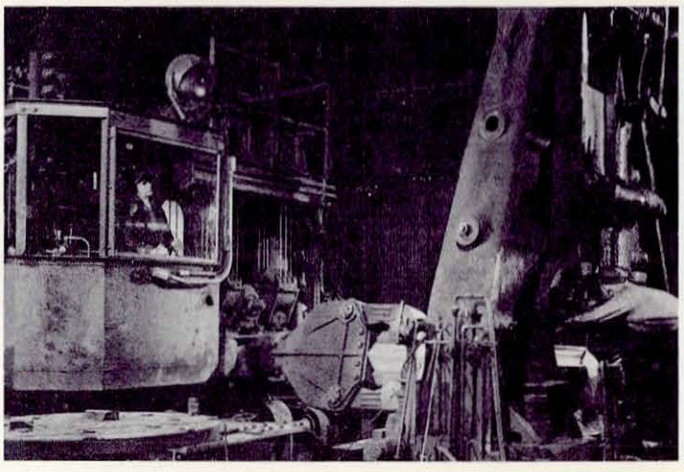
U·S·S FORGED STEEL AXLES

FORGED STEEL AXLES for all railroad applications, made in accordance with AAR and ASTM specifications, are produced by United States Steel Company in two plants, at McKees Rocks (Pittsburgh), Pennsylvania, and Gary, Ind.

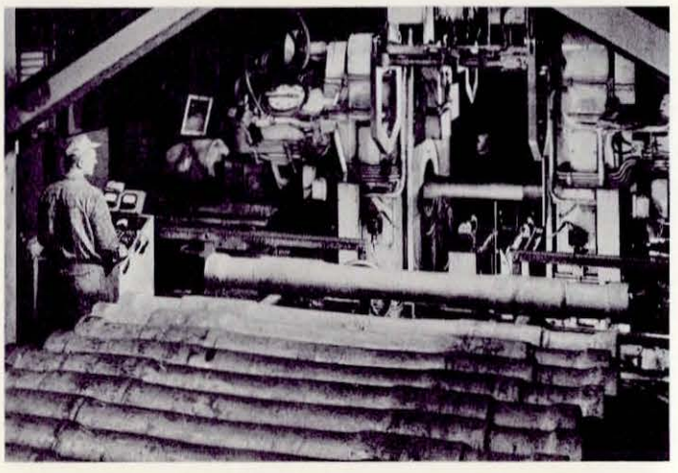
U·S·S Forged Steel Axles can be furnished untreated or heat treated for diesel locomotives, electric locomotives, steam locomotives, tenders, passenger cars, express cars and freight cars. These axles can be furnished rough turned, finish turned, burnished, or hollow bored, according to the special requirements of each customer.

The high quality of U·S·S Forged Steel Axles is a matter of record. Heat treating equipment is modern, and every step is under the observation of experienced metallurgists. The machinery used for turning, centering, cutting and boring is of advanced design to assure accurate dimensions. Axles are carefully tested and inspected and every precaution is taken to insure that they meet specifications in all respects.

U·S·S Forged Steel Axles for freight car service are also made by the Tennessee Coal and Iron Division at Fairfield, Alabama.



To assure the best results in forging, this modern mechanical manipulator is used to handle the axle blooms under the forge hammer.



Final machining of axles in customers' plants is made easier by this specially designed precision cut-off and centering machine. Here, these important dimensions are achieved with accuracy and uniformity.

U·S·S FORGED STEEL AXLES

FREIGHT CAR AND LOCOMOTIVE TENDER AXLES
1928 Standards, Revised June 1950

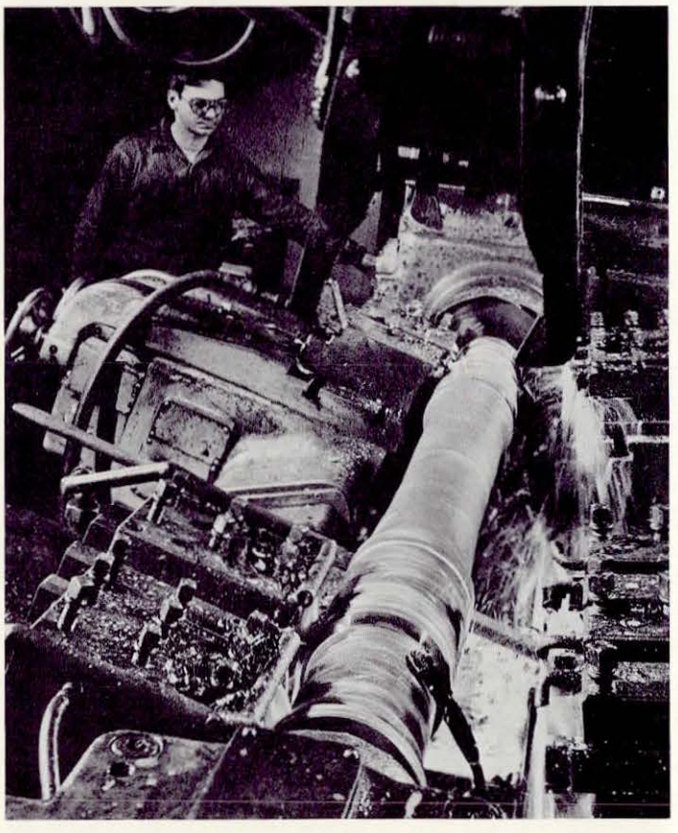
A.A.R. Axle Design	Journal Dimensions	Capacity	Weight Smooth Forged Only	Rough Turned Journals and Wheel Seats	Rough Turned All Over	U·S·S Drawing
	Inches	Pounds	Pounds	Pounds	Pounds	Number
A	3¾ x 7	15,000	470	435	425	A-101
B	4¼ x 8	24,000	575	530	520	A-102
C	5 x 9	32,000	755	705	695	A-103
D	5½ x 10	40,000	900	835	825	A-104
E	6 x 11	50,000	1095	1015	1005	A-105
F	6½ x 12	60,000	1290	1200	1185	A-106

FRICTION-BEARING PASSENGER CAR AND LOCOMOTIVE TENDER AXLES
1940 Standards

A.A.R. Axle Design	Journal Dimensions	Capacity	Weight Rough Turned All Over	U·S·S Drawing
	Inches	Pounds	Pounds	Number
A	3¾ x 7	12,000	450	A-301
B	4¼ x 8	19,000	565	A-302
C	5 x 9	25,500	735	A-303
D	5½ x 10	32,000	880	A-304
E	6 x 11	40,000	1060	A-305
F	6½ x 12	48,000	1240	A-306

PASSENGER CAR AND LOCOMOTIVE TENDER AXLES
A.A.R. Standard Design—1944—Roller Bearing

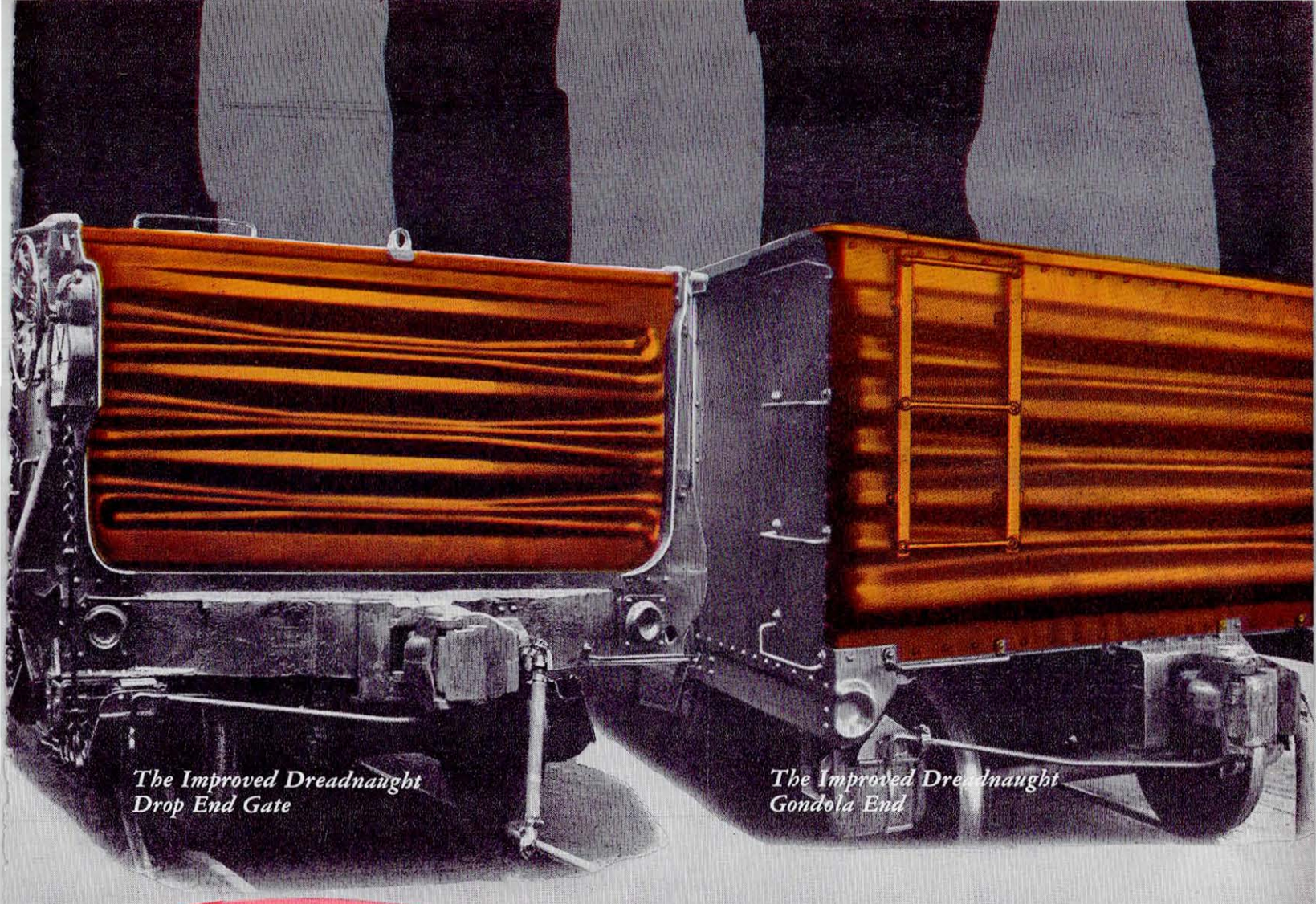
A.A.R. Axle Design	Journal Dimensions	Capacity	Weight Rough Turned All Over	U·S·S Drawing
	Inches	Pounds	Pounds	Number
B	4¼ x 8	19,000	565	A-402
C	5 x 9	25,500	735	A-403
D	5½ x 10	32,000	880	A-404
E	6 x 11	40,000	1060	A-405
F	6½ x 12	48,000	1240	A-406



On this fully-automatic high-speed lathe, 14 cutting tools accurately rough-machine axle journals, end collars, dust guards and wheel seats in a matter of minutes.

UNITED STATES STEEL

Litho in U.S.



The Improved Dreadnaught Drop End Gate

The Improved Dreadnaught Gondola End

Standard

There are no better ends for gondola cars.

Standard
RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 SOUTH MICHIGAN AVENUE, CHICAGO 4 • 247 PARK AVENUE, NEW YORK
HOBART BUILDING, SAN FRANCISCO • FIRST NATIONAL BANK BUILDING, ST. PAUL

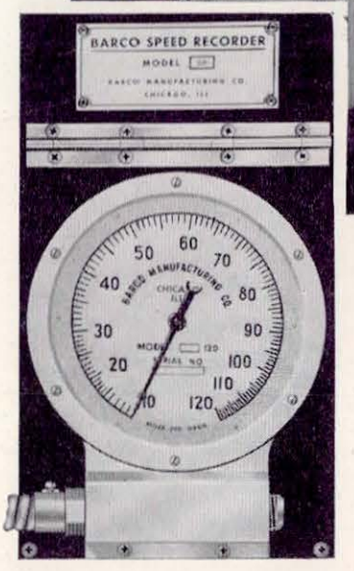
THE WORLD'S LARGEST FABRICATOR OF RAILWAY CAR SPECIALTIES

Ahead in DESIGN!

"BEST BY ANY PERFORMANCE TEST"

■ *The trend is to* BARCO! Experienced users now know that Barco Recorders are definitely *superior* in Design . . . Performance . . . Accuracy . . . Dependability . . . and all-around convenience in using. Only Barco provides the accuracy of ALL-MECHANICAL operation.

The BARCO line is complete! Records of every locomotive operation — for every type of engine in service or now being built. For information, call or write BARCO MANUFACTURING CO., 1800K Winnemac Avenue, Chicago 40, Illinois.



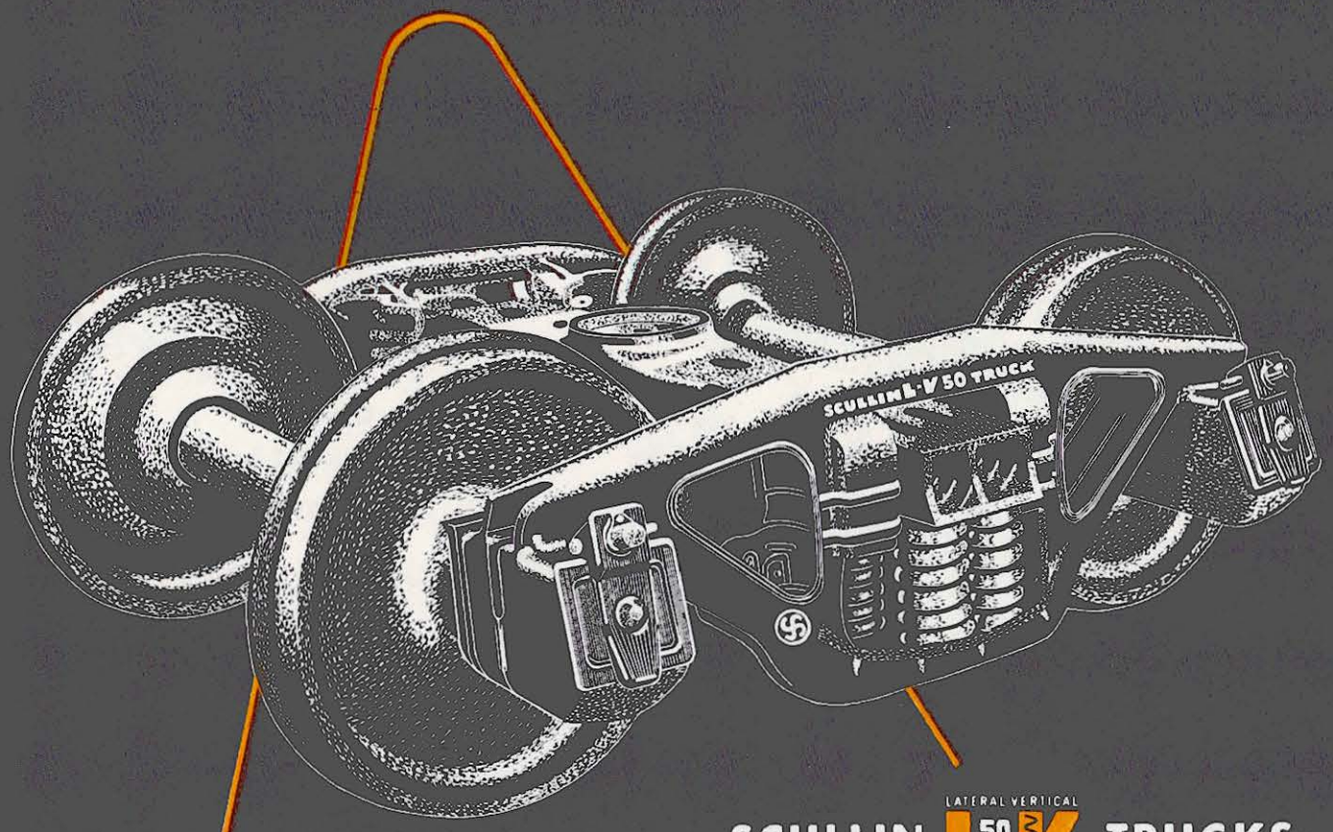
The installation shown above is typical of many on leading long-line roads. In inspections after a million miles of service, recorders have shown accuracy within 2% at 100 MPH.

Send for this New Bulletin

BARCO RECORDERS

- SPEED RECORDERS
- SPEED INDICATORS
- DIESELOMETERS
- SWITCH ENGINE RECORDERS

FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY



LATERAL VERTICAL
CUSHIONED MOTION

SCULLIN L50V TRUCKS

THE SMOOTHEST TRAFFIC-BUILDERS BETWEEN LCL AND YOUR RAILS

STEEL CASTINGS MANUFACTURED

NEW YORK
CHICAGO
BALTIMORE
RICHMOND, VA.

Photo courtesy Canadian Pacific Railway . . .

SCULLIN STEEL CO.

SAINT LOUIS 10, MISSOURI

The McWILLIAMS TIE TAMPER Does MORE for you

—than any other tamping machine ever developed!

Why IT WILL GIVE YOU BETTER MAINTAINED TRACK

This is the only tie tamper which compacts the ballast firmly *under the rail*. Operating by precisely controlled pressure, it uses 16 air tools to tamp under the rail and for a predetermined distance outside and inside the rail. Since it causes a minimum of operator fatigue, you can be sure of efficiently tamped track throughout the entire working period.

With its operating rate of 350 to 450 feet/hour of perfectly tamped track, this is by far the most versatile and efficient tamping machine ever developed. The unique split-head design permits raising of joints and spot surfacing, as well as out of face general raises. It tamps all kinds of ties efficiently, including those which are slued. As added premiums, this machine is the easiest of all tampers to maintain in the field, and it has a compressor which can be used for operating a wide variety of air equipment used in track maintenance.

WRITE FOR DETAILS

Railway Maintenance Corporation

PITTSBURGH 30, PA.

DESIGNERS AND MANUFACTURERS OF: McWILLIAMS MOLE AND SUPER MOLE . . . McWILLIAMS TIE TAMPER, CRIB CLEANER AND BALLAST DISTRIBUTOR . . . R. M. C. RAIL JOINT PACKING

CLOSE THE DOOR ON DIESEL STARTING WORRIES!

That's good advice . . . and easy to take. Just make sure you've got Goulds in the battery compartment . . . and that the Gould Plus-Performance Plan keeps them . . . or any other lead-acid batteries you might be using . . . in top-capacity condition at all times.

Here's double-barreled assurance of engine availability, extended battery service and elimination of diesel starting worries. It will pay you to write for full information on Gould Batteries and the Plus-Performance Plan.

GOULD PLUS-PERFORMANCE PLAN—A library of technical information that tells you how to select, charge, maintain and determine the condition of lead-acid batteries. It's free. Write Gould Battery Information Headquarters for details.

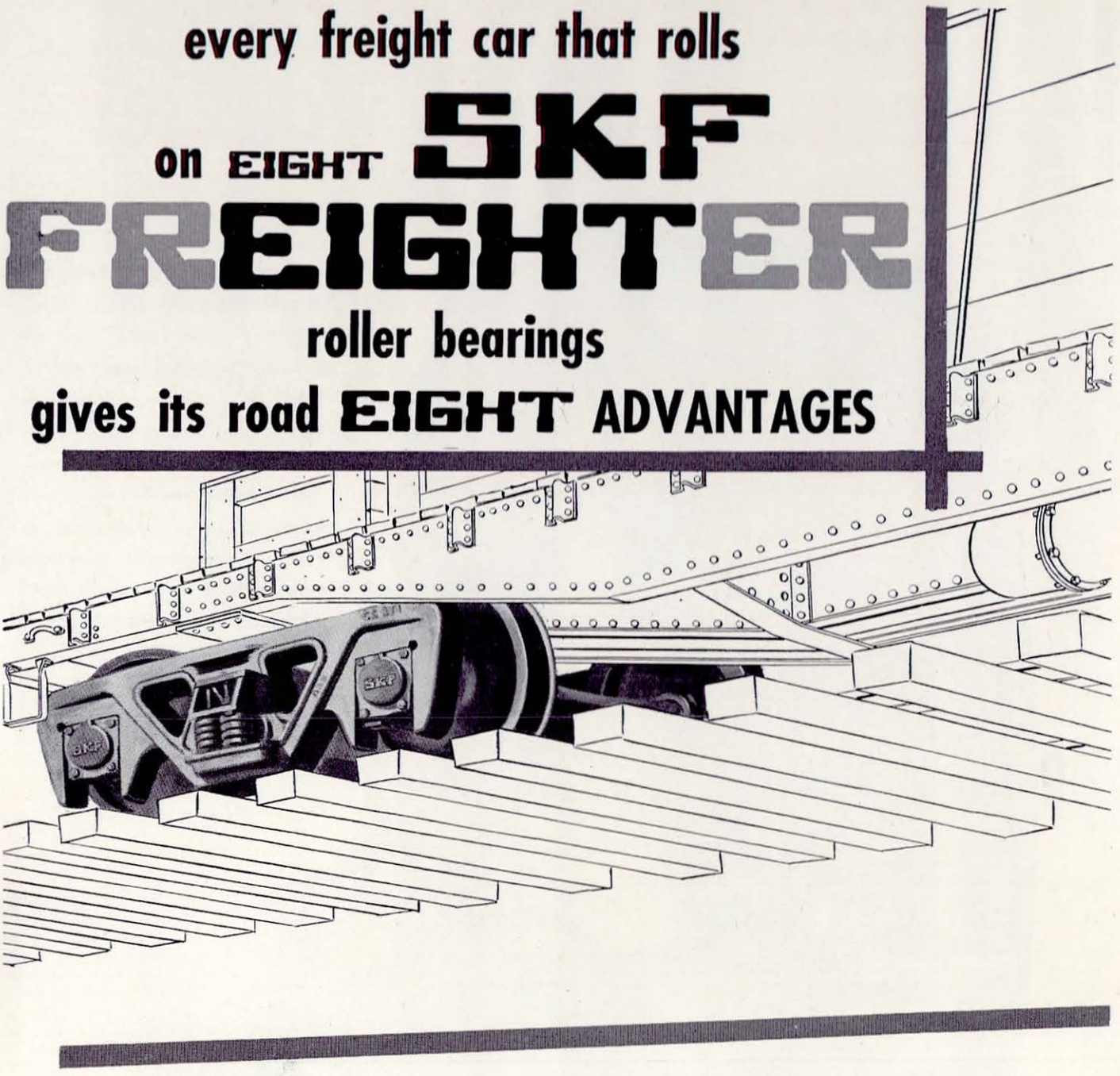
Gould
"Z" Plate Batteries
for Diesel Starting

GOULD *Industrial Batteries*

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

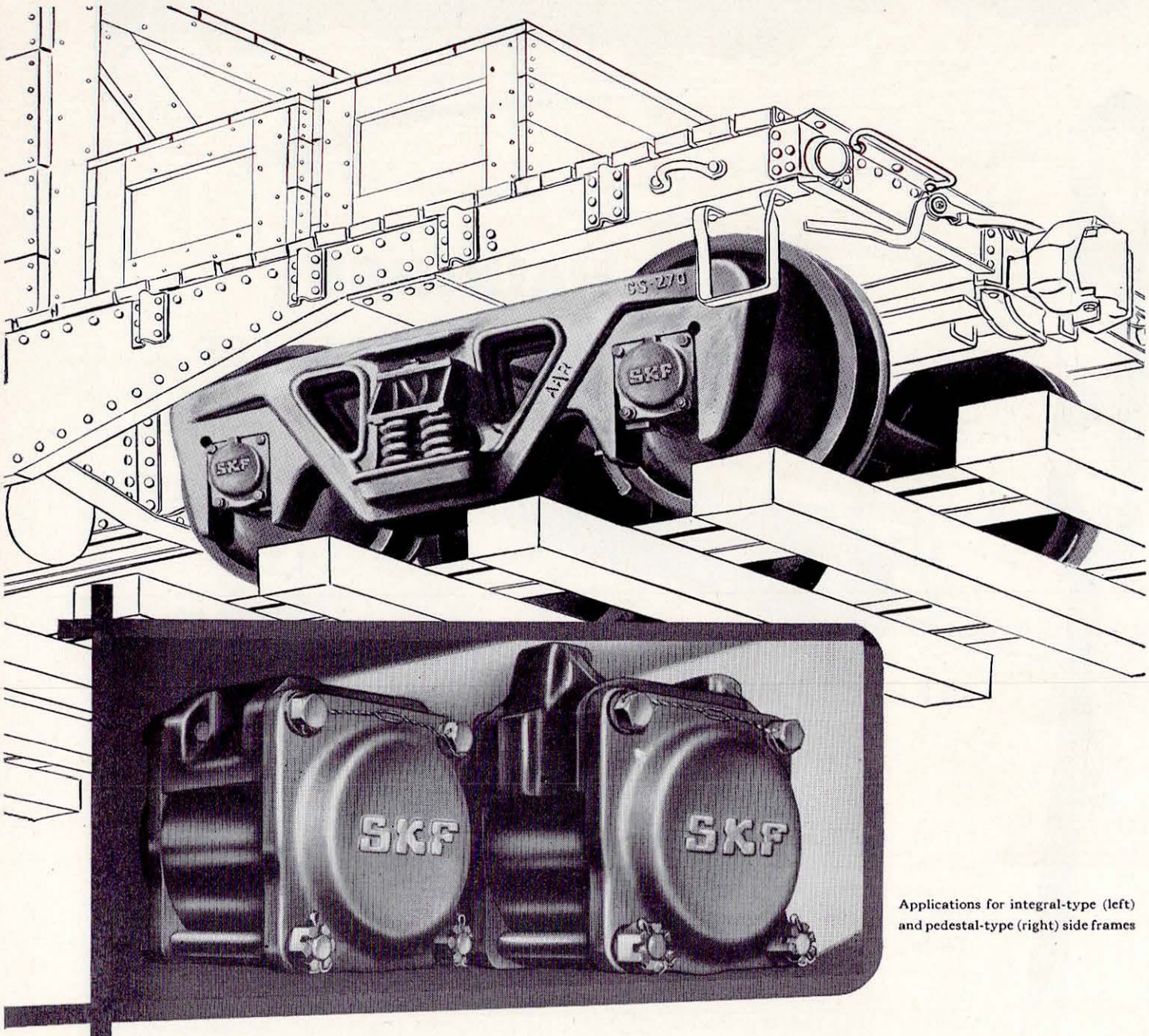
Always Use Gould-National Automobile and Truck Batteries

every freight car that rolls on EIGHT SKF FREIGHTER roller bearings gives its road EIGHT ADVANTAGES



1st of EIGHT	Maximum safety — no hot box problem.
2nd of EIGHT	Best riding qualities — less lading damage.
3rd of EIGHT	Minimum wear of wheels and truck parts.
4th of EIGHT	Lowest lubrication cost.
5th of EIGHT	Longest bearing life.
6th of EIGHT	Ease of installation; no adjustment.
7th of EIGHT	Adaptable to both pedestal and integral side frames.
8th of EIGHT	Best overall economy.

© SKF INDUSTRIES, INC., 1952



Applications for integral-type (left) and pedestal-type (right) side frames

The SKF FREIGHTER Roller Bearing is a product of the world's widest railroad journal experience. The SKF FREIGHTER is the culmination of 40 years of patient engineering and thorough road tests under railroad operating conditions. SKF Journal Bearings have been applied to over 52,800 freight cars, 30,000 passenger cars, and over 11,300 steam, diesel and electric locomotives throughout the world.

SKF®
ROLLER BEARING JOURNAL BOXES

An SKF Sales Engineer will be glad to tell you, engineering-wise, why your freight cars will roll more efficiently and economically on FREIGHTER Roller Bearings.

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA. — *manufacturers of* **SKF** *and* HESS-BRIGHT *bearings.* 7347

Streamlite HAIRINSUL PROTECTS PERISHABLES...

EFFICIENT UNDER *All Conditions!*

Sudden and extreme temperature changes do not harm valuable perishables when they are shipped to market in cars insulated with dependable Streamlite HAIRINSUL.

Leading refrigerator car builders recognize this fact. That is why, for nearly half a century they have been specifying HAIRINSUL, the dependable all-hair insulation. They know it is the most efficient, most economical under *ALL* conditions . . . and that Streamlite HAIRINSUL weighs 40% less.

More reasons why refrigerator car builders prefer Streamlite HAIRINSUL are given at the right. There are more, too. Write for complete data.

1 LOW CONDUCTIVITY. Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity—.25 btu per square foot, per hour, per degree F., per inch thick.

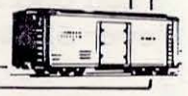
2 LIGHT WEIGHT. Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

3 PERMANENT. Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

4 EASY TO INSTALL. Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

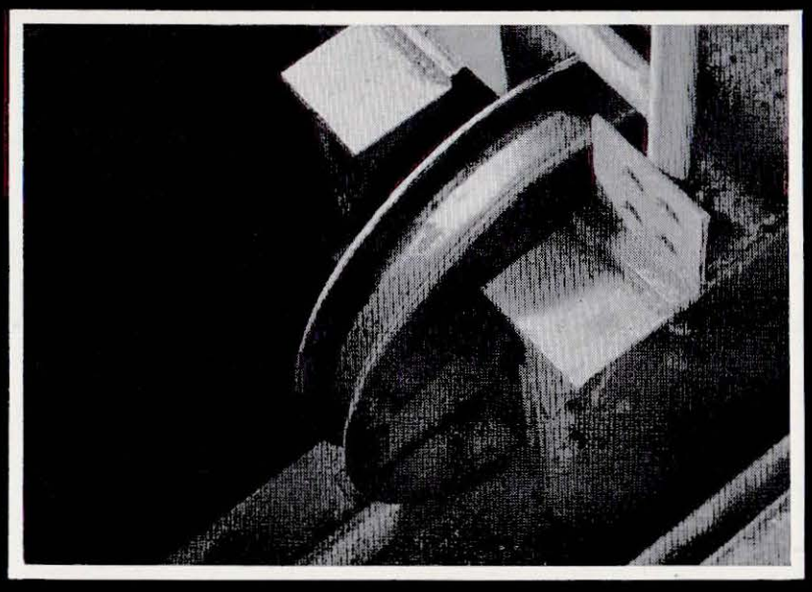
5 COMPLETE RANGE. STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.

6 HIGH SALVAGE VALUE. The all-hair content does not deteriorate with age; therefor has high salvage value. No other type of insulation offers a comparable saving.



Sets The Standard By Which All Other Refrigerator Car Insulations Are Judged

Dept. H-29, Merchandise Mart, Chicago 54, Ill.



Big loads going up–

so RADIOGRAPHY checks the crane wheel

YOU'RE dealing with big stresses and strains when you jockey multi-ton loads of metal around your plant. Every part of the crane must be ready for its job—with an extra margin.

That is why this crane wheel was checked by radiography. It was the one way to prove whether gas pockets or other internal defects might exist to cause a hazard.

Foundries working with all kinds of metals and alloys are finding it increasingly important to radiograph their castings. Then they know only quality products are released. Also in planning long production runs, radiography of pilot castings often indicates ways to improve methods and increase yield.

See your x-ray dealer. He'll gladly show you how radiography can increase your production and improve quality. Also send for a free copy of "Radiography as a Foundry Tool."

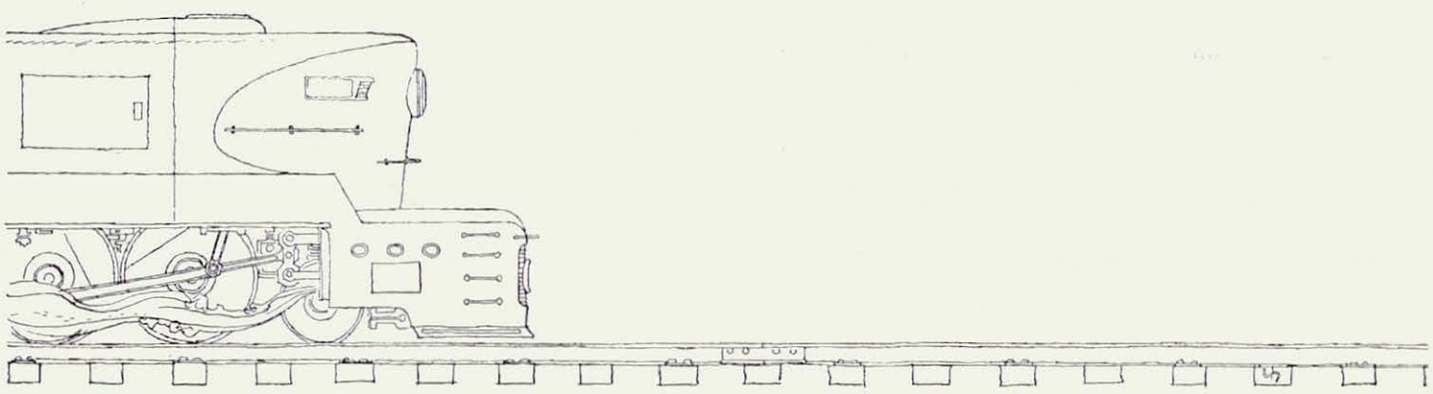
EASTMAN KODAK COMPANY
X-ray Division
Rochester 4, N. Y.

Radiography . . .

another important function of photography

Kodak
TRADE-MARK

What competition means to railway buying



COMPETITION has always been the heart of American enterprise. To encourage it is to strengthen the American system. To profit from it is normal business practice.

The advantages of competition to the buyer of automatic controls have always been apparent to Honeywell, in every market we serve. But nowhere have the blessings to our customers been more pronounced than in our recent work with the railway industry.

During the last two years these developments have transpired:

- *the cost of passenger car heating under competitive bidding has been substantially reduced.*
- *passenger car heating systems have been greatly simplified with a marked reduction in maintenance parts.*
- *steam piping has likewise been simplified with a significant reduction in steam consumption for car heating.*

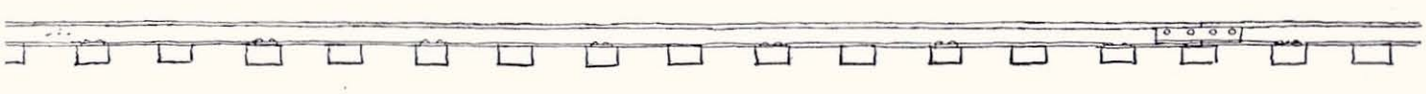
It has been most gratifying to us to observe that our engineering and research activities have been responsible for this progress. Likewise, aggressive Honeywell bidding has stimulated competitive reaction, to the benefit of the railroads.

Honeywell looks forward to an era of increasingly significant service to the industry.

MINNEAPOLIS
Honeywell

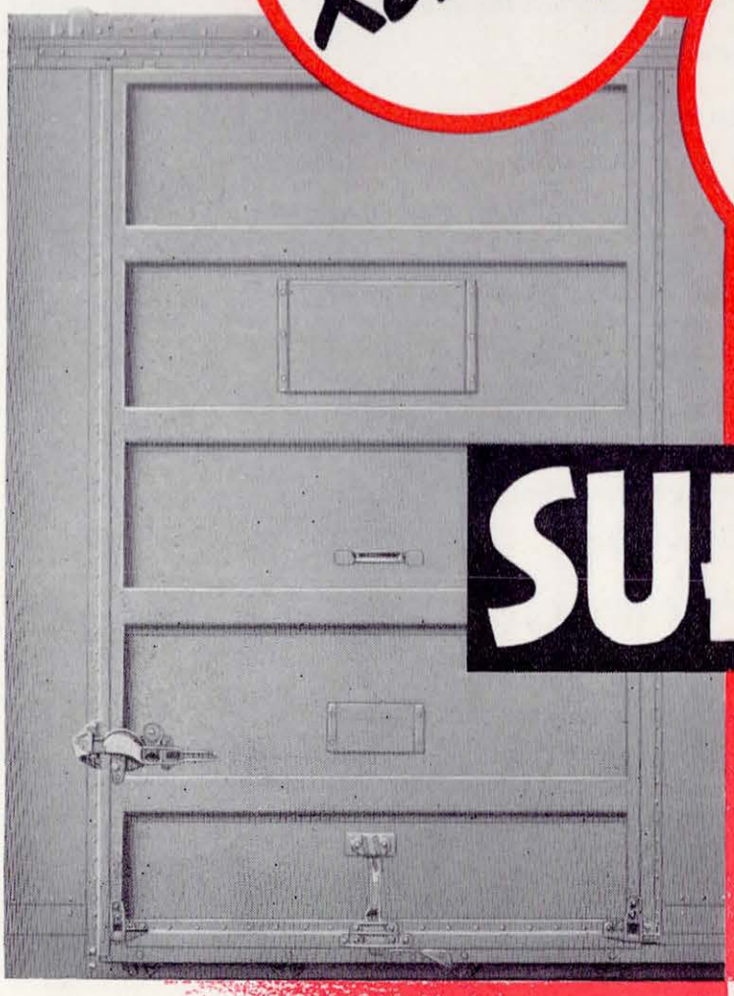
H
HONEYWELL

First in Controls



Free Rolling

Tight Closing



FEATURES of the

SUPERIOR CAR DOOR

Free Rolling on ball bearings.

Easy operation means less damage to door and car side.

Tight closing, all edges baffled. Weatherproof, cinderproof, pilfer-proof.

Superior Car Doors mean satisfied shippers

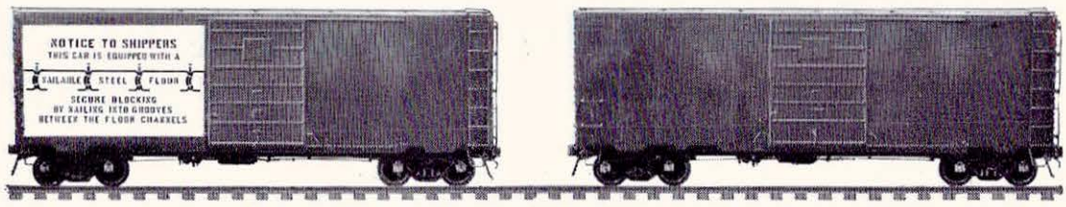
•

Lading protection reduces damage claims

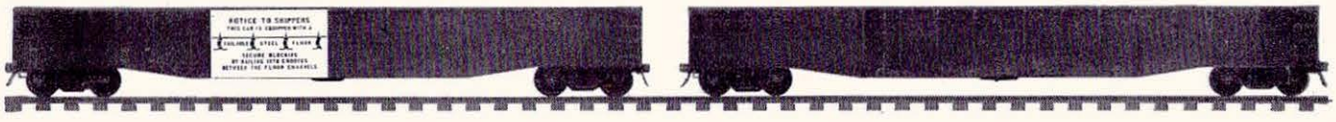
SUPERIOR CAR DOOR COMPANY

CHICAGO 4, ILLINOIS

Q. Which car spends less time on the rip track?



Q. Which car brings in greater revenue?



A. The car that has...

because... *The car is stronger.* Solidly joined to the sides and underframe, NAILABLE STEEL FLOORING becomes an integral part of the car structure, greatly increasing the ability to withstand dynamic service.

The floor is stronger. Made of heavy gage N-A-X HIGH-TENSILE steel, cold-formed into channels, N-S-F provides the extra strength needed to eliminate break-through of heavy lading—and withstand the concentrated loads and abrasion of heavy lift-truck operation in boxcars. In gondolas, N-S-F provides a strong, double-duty floor that withstands heavy impact from magnet or mechanical loading and is also nailable for blocking finished freight.

That means less maintenance and time lost on rip tracks and more time in revenue-producing movement. Let us help you figure the operating economies you can realize from these values.

PATENTS PENDING 52-SF-7A

GREAT LAKES STEEL CORPORATION

STEEL FLOOR DIVISION • Ecorse, Detroit 29, Michigan

PRODUCER OF N-A-X HIGH-TENSILE STEEL

NATIONAL STEEL CORPORATION

NATIONAL STEEL

Nailable Steel Flooring!

Look for this stencil . . .

NOTICE TO SHIPPERS
THIS CAR IS EQUIPPED WITH A
NAILABLE STEEL FLOOR
SECURE BLOCKING
BY NAILING INTO GROOVES
BETWEEN THE FLOOR CHANNELS

Sales representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, New York and Montreal.

NOW! Get the Book That Protects the Money You Invest in Diesels

DIESEL-ELECTRIC LOCOMOTIVE HANDBOOK

By GEORGE F. McGOWAN Technical Consultant

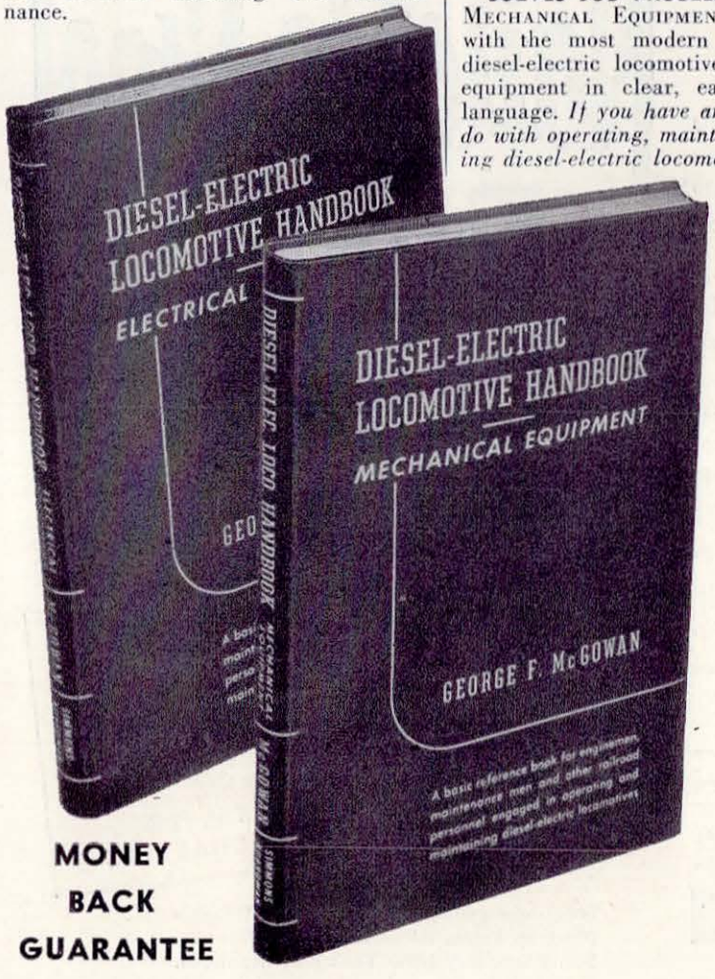
SEND TODAY for this great new book! Packed with photos and diagrams, it brings you up-to-the-minute facts — *the latest available* on diesel-electric locomotives and equipment.

Here is everything you need and want to know—*written from the viewpoints of the men in the cab and the shop*—by an experienced railroad man—*all checked and approved by the leading locomotive builders.*

For your convenience this handbook is sold separately in two volumes: *Mechanical Equipment and Electrical Equipment.* Read the descriptions that follow and you'll agree: *Here is essential information you cannot afford to be without!*

MECHANICAL EQUIPMENT

Everything necessary to complete understanding of diesel-electric locomotives is included—how diesel-electric locomotives are constructed, the reasons behind their design, proper operating methods, things that can go wrong with them, "trouble-shooting," and effective servicing and maintenance.



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Among the chapters are: The Development of the Diesel-Electric Locomotive; Fundamentals; Lubricating and Cooling; Fuel System—Fuel; Pistons, Piston Rings, Liners; Connecting Rods, Bearings, Crankshafts; Valves, Timing, Heads; Governors, The Steam Generator; The Air Compressor; and The Gas Turbine Locomotive.

DESCRIBES LOCOMOTIVES BY MAKE

Separate chapters are devoted to accounts of diesel engines made by The American Locomotive Company, Baldwin Locomotive Company, Electric-Motive Diesel, Fairbanks, Morse & Company, and Lima-Hamilton Corporation. Each engine, its parts, and its non-electrical auxiliaries are described and illustrated in full detail.

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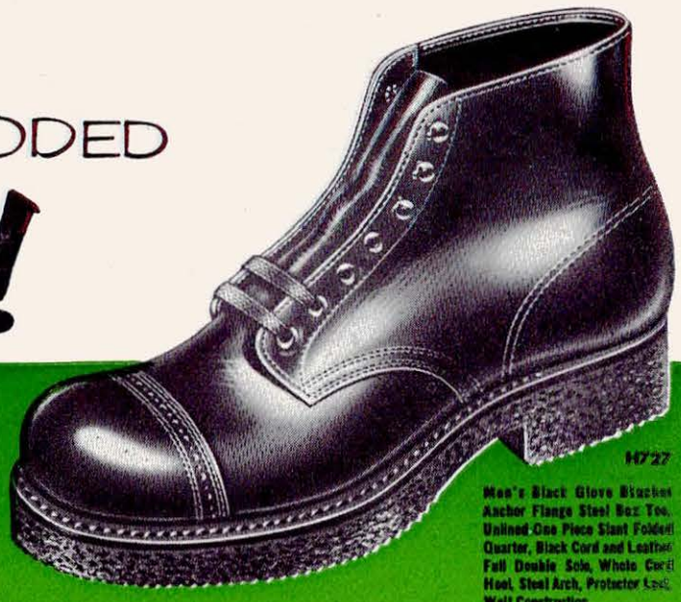

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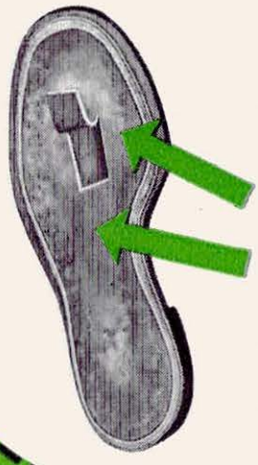


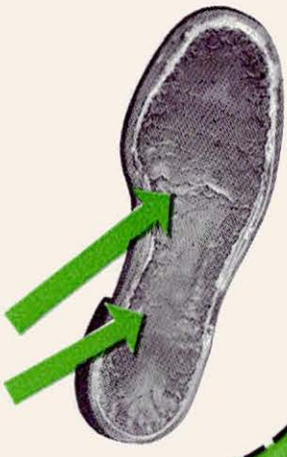
Here are two insoles from a single pair of shoes worn in a foundry for seven months. The one from the left shoe is a BoL Tan leather insole; the other is a regular quality leather insole.

Note the BoL Tan leather insole is still soft and pliable, shown by cut section lifted for inspection!

The BoL Tan leather insole stays comfortable, permits re-soling when ordinary insole would have failed!

Ordinary insole is cracked, curled, saw-edged . . . dried out and damaged by perspiration attack!

Ordinary insole is unfit for further wear causing discard of shoe long before uppers are worn out.



Only the BoL Tan leather insole resists the damaging attacks of perspiration!

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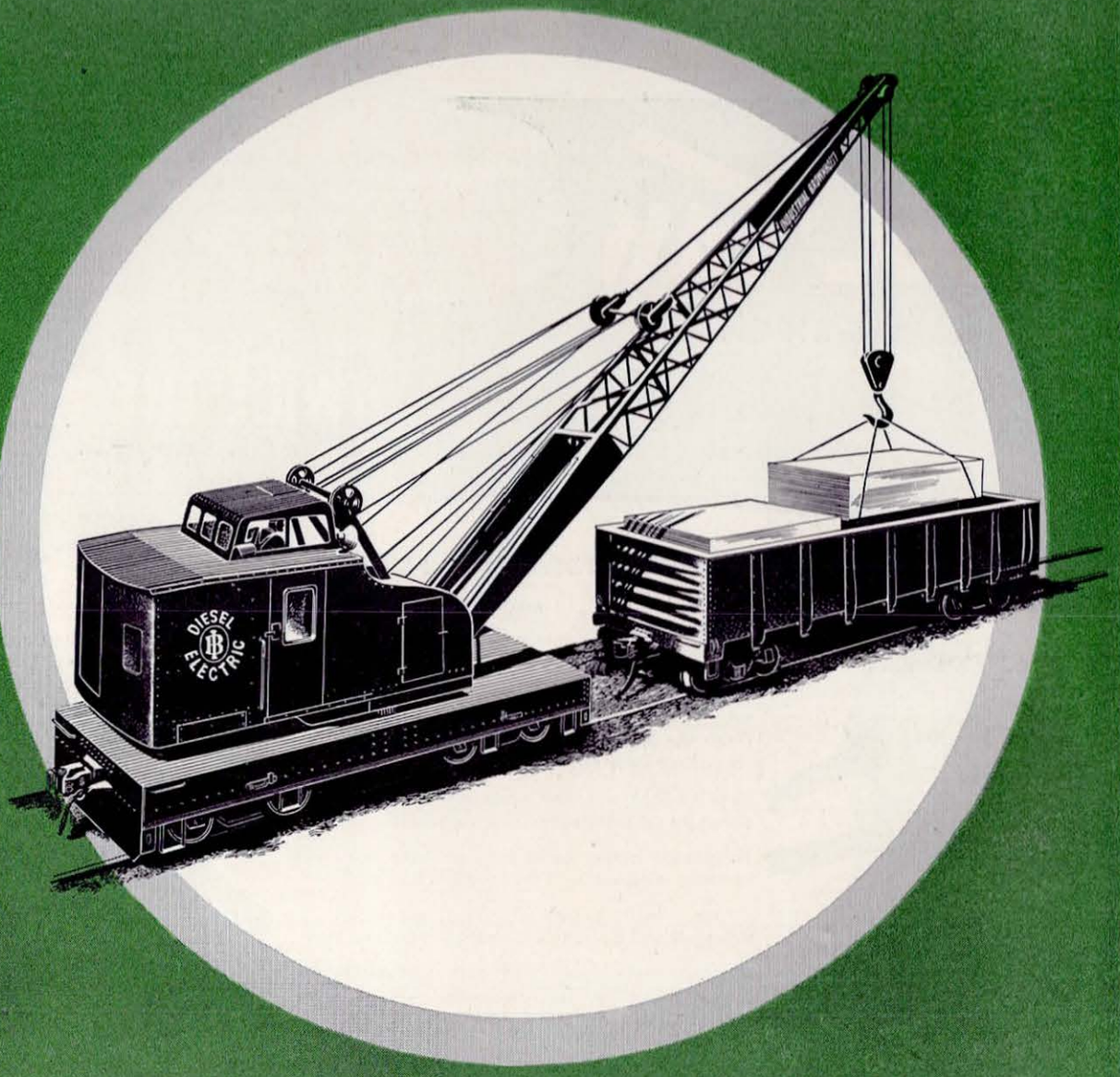

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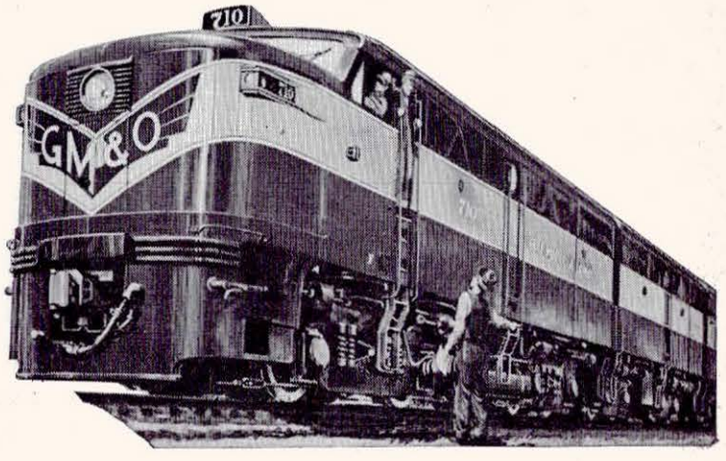

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and

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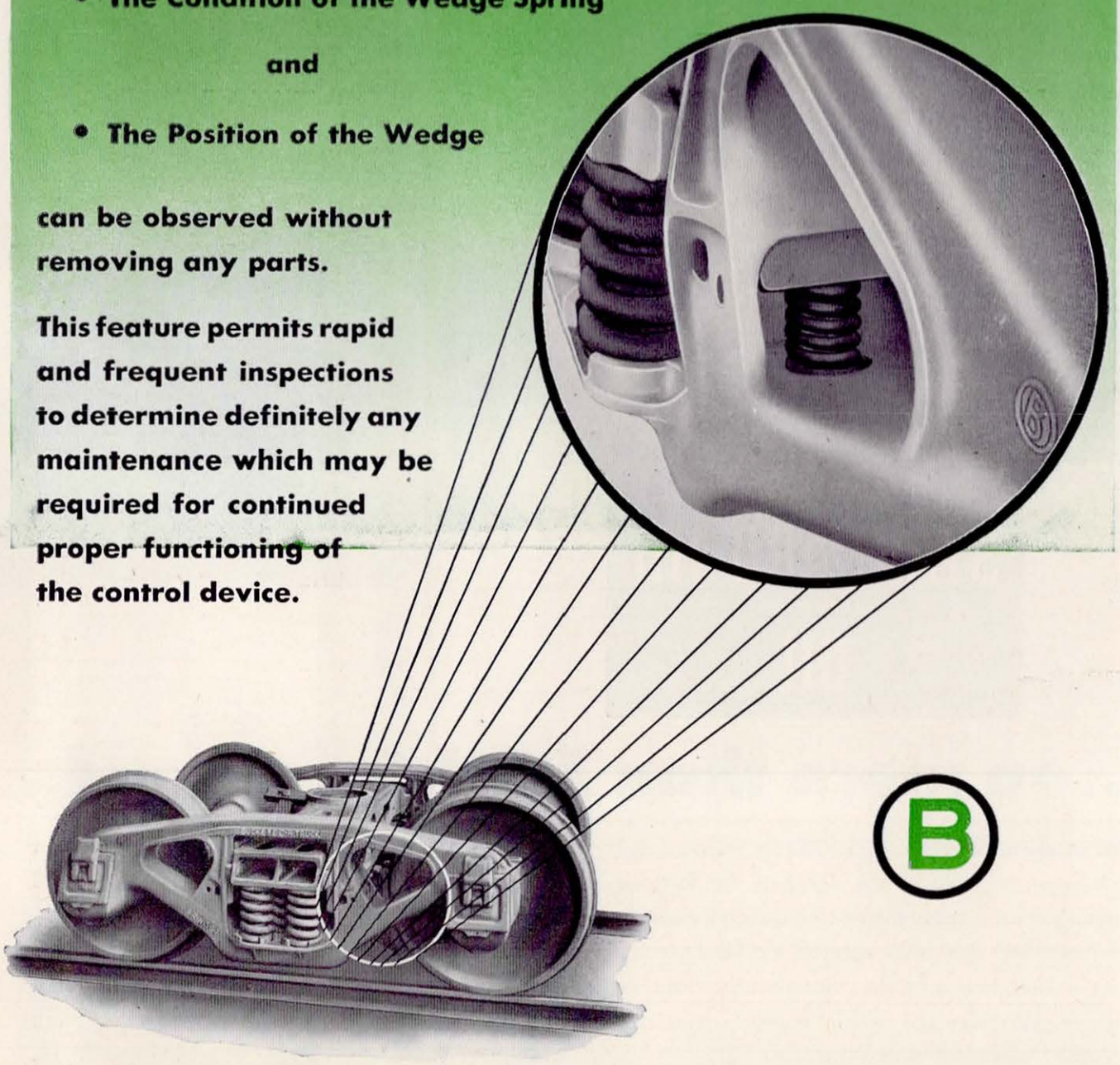
This feature permits rapid and frequent inspections to determine definitely any maintenance which may be required for continued proper functioning of the control device.



B

THE BUCKEYE STEEL CASTINGS COMPANY

New York, N. Y. Columbus, Ohio Chicago, Ill.

Electric Switch Heater

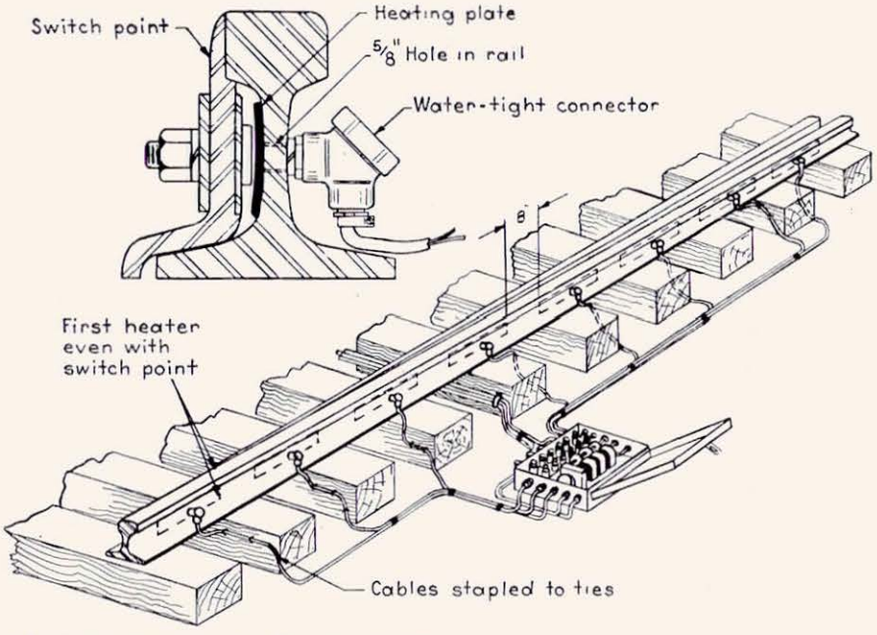
A new type of electric switch heater, consisting of several separate electrical heating units, mounted on the gage side of the web of the rail behind the switch point, has been developed by the Rails Company, New Haven, Conn. Each heating unit, known as a heating plate, is ⅛ in. thick, 3 in. high, and 15 in. long. These plates are mounted flat against the gage side of the web of the stock rail. The first heater unit extends beyond the facing point end of the switch points, and the remaining heater units are spaced about 8 in. apart along the stock rail behind the switch point.

A total of 16 units are used for a 15-ft. point, or 20 for a 20-ft. point. Each heater unit is held in place by a stud 9/16 in. in diameter, which extends from the back of the heater plate through a ⅝-in. hole in the web of the rail. A watertight condulet fitting applied to the end of the 9/16-in. stud, which has a special screw cap, serves as a small junction box where connections are made between the wires from the heater element and the cable extending to the controller and source of electrical feed. The electrical element in each heater is rated at 500 watts at 110-220 volts a.c.

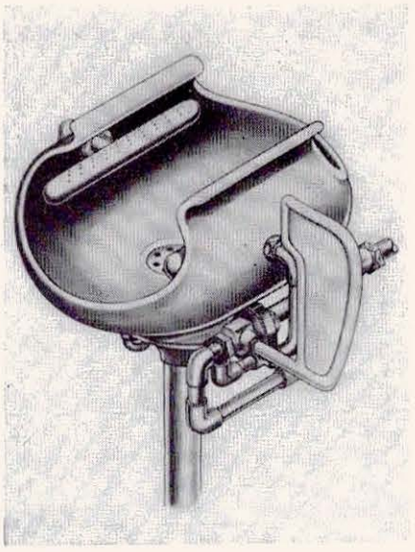
According to the manufacturer the 45 sq. in. of the flat surface on each plate is in direct contact with the surface of the web of the rail, thus transferring to the rail a maximum amount of the heat generated in the electrical element.

Where sufficient alternating current is available, and costs are not prohibitive, the circuits can be installed to feed all of the heater elements in an entire switch layout at the same time. Where there is not sufficient current, it is possible to minimize the maximum current demand by feeding the heaters separately in groups. The controller includes a synchronous motor which drives a shaft with cams which operate microswitches that feed groups of heaters in sequence. These may be adjusted for timing to suit conditions. Thus, where switches equipped with a total of 16 heaters connected in groups of 6, 6 and 4, the maximum current demand is 3 kw. In a 24-ft. switch layout, including 24 heaters in groups of 8 each, maximum demand is 4 kw.

The manufacturer states that by thus reducing the maximum current, these electrical heaters can be installed wherever connections can be made to commercial sources of a.c. power, with a minimum of expense for power transformers, controllers and wires, and that it is practical to install this electric heater at outlying power switches such as in centralized traffic control territories.



Schematic diagram showing construction and installation of electric switch heater.



An eye-wash fountain that is said to wet all parts of the face instantly, yet eliminate the danger of back syphonage, has been announced by Logan Emergency Showers, Inc., Glendale, Cal. It meets all known industrial hygiene recontamination regulations and plumbing and sanitary standards, the manufacturer states.

Photocopier

"Copyfix" is the name for a new photo-exact copier being marketed by Remington Rand, Inc., New York 10. Copies up to 14 in. in width can be produced by this machine, which can be plugged into any electrical outlet.

To make copies, a sheet of Copyfix negative paper is placed face-to-face with the document and then exposed. The exposed negative paper is then placed in the machine with a sheet of positive Copyfix paper. In about ten seconds negative and print will emerge from the rear of the machine. The copy is ready for immediate use.

3 GOOD ANSWERS——

TO ROADBED MAINTENANCE PROBLEMS

The complete Jordan spreader-ditcher-snow plow line offers you a year-around solution to every roadbed maintenance and snow removal problem: ballast plowing, roadbed shaping, ditch cutting, fill spreading, bank widening, shoulder dressing, ice cutting and track flanging.

Plan to watch a Jordan in action and you'll see why so many railroad men say, "It does the work of an army of men."

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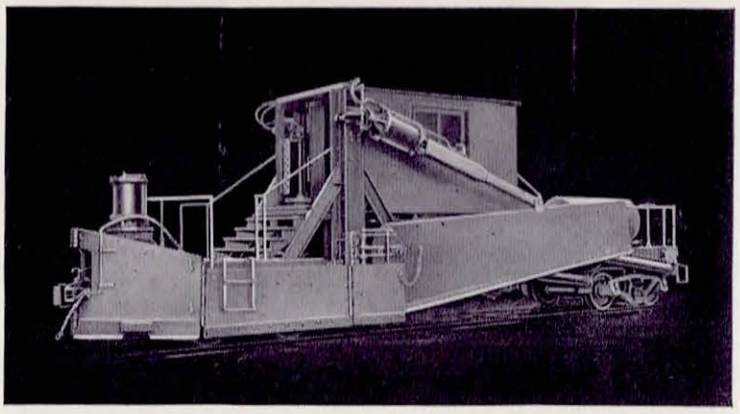
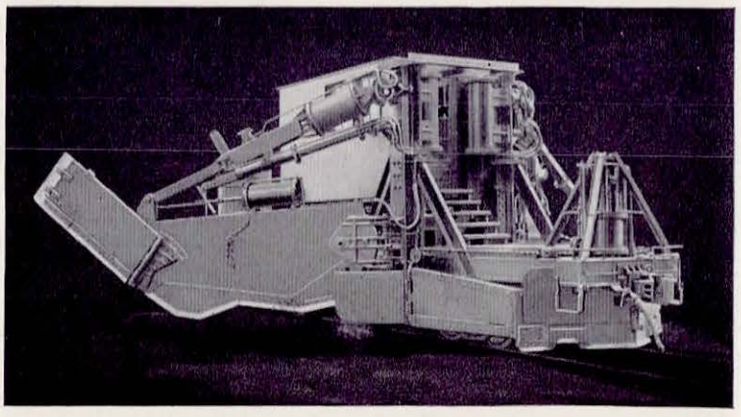
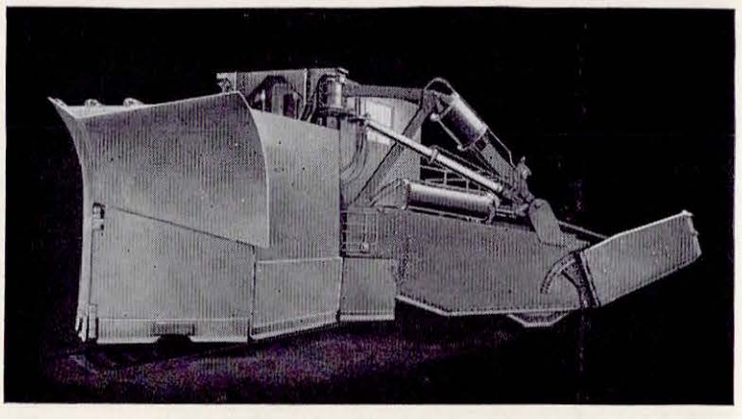


DITCHERS——



SNOW PLOWS—



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RAILWAY AGE

RAILWAY Mechanical and Electrical Engineer

Benchmarks and Yardsticks

PROFICIENCY AT SOME SPECIALIZED JOB isn't the same thing as leadership in that activity. C. I. Barnard* tells of hearing an engineer protest, at a session where education for leadership was being discussed, at the supervision of engineers by persons without engineering training. "The superiority of engineers in nearly all respects, especially in intellect, training, and science, was implied," says Barnard; and he adds that most of the audience agreed with the speaker, thereby showing that they had little understanding of what the leader's function is.

What do leaders do in carrying on the job of leading—that is, in getting other people to work together for a common objective? Barnard says leaders do four things, in exercising effective leadership, viz.:

Determine objectives—the leader has to know and to say what needs to be done, when to do it and when to stop. Other people may first suggest these things to the leader, who "has to be stupid enough to listen a great deal"—but the leader has to decide whose advice to listen to.

Manipulate means—some technical competence in dealing with inanimate material is needed by the leader. The importance of his skill at manipulating these inanimate "means" is frequently overemphasized, giving rise to the tendency "to overlook superior leaders who at the moment may be lacking particular technical qualifications." The skill he needs is that of dealing with people.

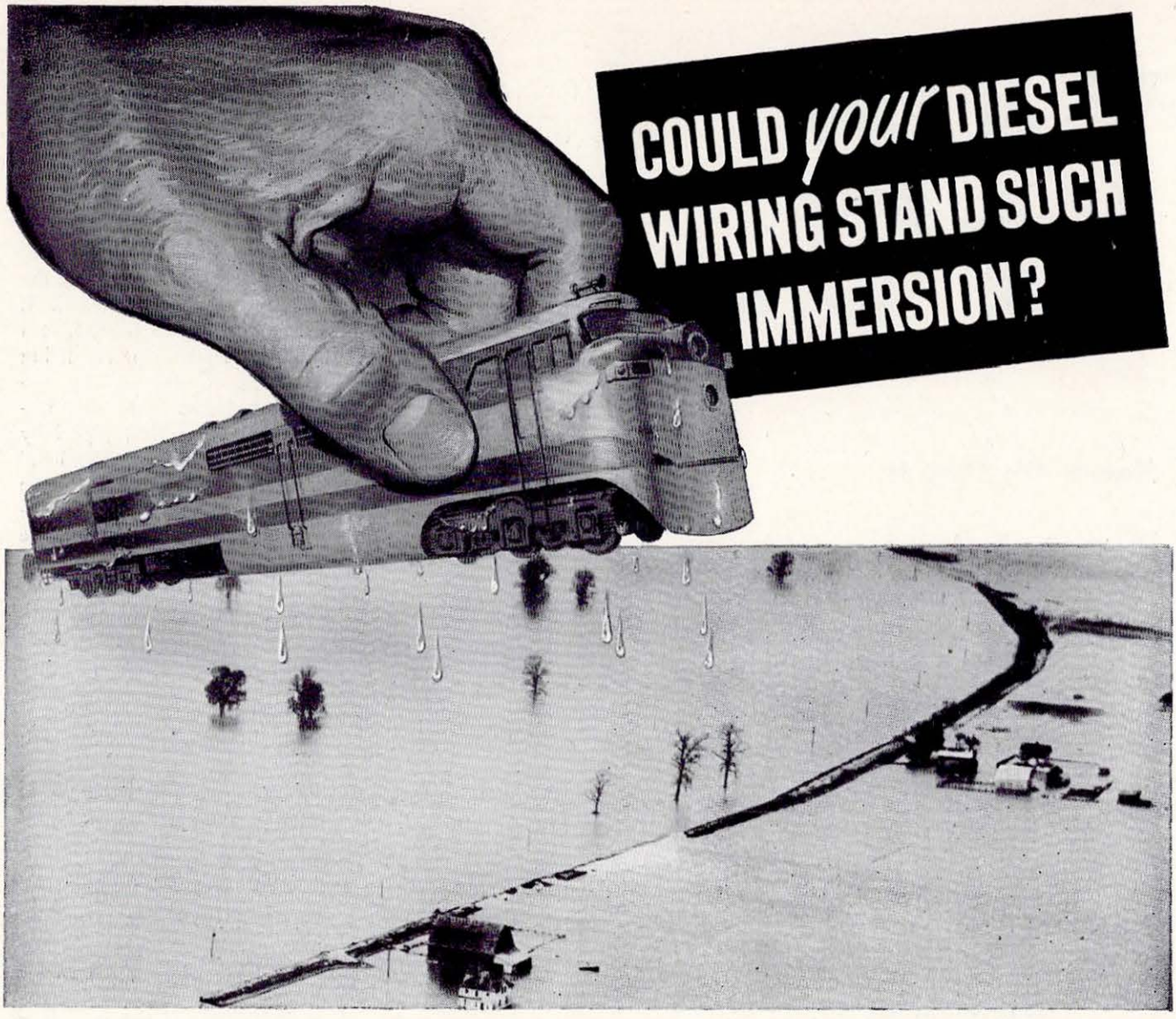
Serve as the instrument of action—the productive process involves people working together effectively toward a common objective. The mechanism which brings the efforts of a lot of people into effective coordination is *organization*. The formation, maintenance and guidance of organizations—in other words, getting effective action—is the leader's job.

Stimulating action—it isn't sufficient for the leader to know and say what to do, and when to do it; or to know all he needs to know about the inanimate materials he deals with; or to know how to maintain an effective organization. In addition to all these things, he has to be effective in getting people to do as he directs. In other words, he has to be a master of persuasion—this term not meaning wheedling, but any method whatever which succeeds in getting the necessary action.

The mastery of some technological specialty, however highly skilled, while praiseworthy in itself, has no connection whatever with leadership, which is a skill of quite a different order.

J. G. L.

*In his "Organization and Management," published by Harvard University Press.



Okonite-Okoprene wires have been "flood-proved"

LAST SUMMER'S mid-west floods laid up over half a hundred Diesel locomotives. Some of these units were completely submerged for days, resulting in an appalling reconditioning task. Repair crews, however, noted one thing:

Wherever Okonite-Okoprene Diesel locomotive wire had been used, it was found to be still in excellent condition. In contrast, traditional types of varnished cambric insulated wire, unable to withstand such immersion, were seriously damaged and had to be replaced.

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Moisture resistance is only one of the properties of Okonite-Okoprene which make it so effective for Diesel Locomotive Wiring. The tough Okoprene sheath retains its strength when exposed to oils and greases. It resists abrasion and mechanical damage to a high degree. And it will not support combustion or communicate fire along the cable.

The basic Okonite insulation is the same long-lived mineral base rubber insulation that has been proved on railway signal cables throughout the country for over 70 years.

Okonite-Okoprene is today's answer to modern locomotive wiring. Bulletin RA-2078A gives full details about construction and specifications of Okonite-Okoprene Type DEL Diesel Locomotive Wire for both conduit and exposed installations. Write for it today. The Okonite Company, Passaic, N. J.

The best cable is your best policy

OKONITE — OKONITE SINCE 1878 — *insulated wires and cables*

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THE RAILROADS AND THE ELECTION

The outcome of the November elections is of vital importance to the railroads and the cause of freedom—but not because the election of either Governor Stevenson or General Eisenhower is likely to effect this latter paramount issue very much, either favorably or otherwise. Both candidates are able men, but neither of them has taken or is likely to take a really unequivocal stand either for or against socialization of the economy. Effective action on this pivotal issue depends, rather, upon the caliber of men who are elected to the Senate and the House.

There are those who are convinced that they should oppose Governor Stevenson because of his poor scent for Communists in government and his critical attitude toward those who do have this highly necessary talent. There are others who are just as convinced that they should oppose General Eisenhower because of the internationalistic semi-Americanism of some of his most vocal adherents. Those with such deeply held views are privileged to express them at the polls, but it would be a pity if they should put in so much emotion and time on the big names that they forget the candidates for legislative positions—who in the long run are more important.

This conclusion follows from the fact that, from a nationwide standpoint, both the major political parties are shot through with socialism and statism—while neither of the standard bearers can afford to admit that fact in detail, nor to repudiate any and all action already achieved in that direction. Similarly, neither of the major candidates is going to come out candidly for a wholesale increase in socialism or statism. To get a clear-cut expression on this issue, we cannot look to the national candidates, but must go to aspirants for Congress. Some of these, at least, leave very little doubt in anyone's mind as to where they stand—for example, such senators as Bricker or Byrd, on the one hand; or Morse or Benton, on the other.

Neither party has defined, or is likely to define, a boundary to governmental power—saying: Thus far may it go and no farther. Failing such a declaration, "empire building" within the government will inevitably continue to expand governmental functions at the expense of individual incomes and individual liberty—except for such brakes as the stubborn consciences of individual congressmen can be persuaded to apply.

Politicians Must Be Practical

Politics has been defined as "the science of the possible." If that definition be accepted, then there are no politicians who can be expected to save the country in any great hurry. Politicians, to have power, have to get elected. To get elected they have to agree to do the things a majority of their vocal constituents require of them. The majority of vocal constituents, especially in the big urban districts, apparently don't want less government in their lives, but more.

Until they awaken to the fact—as they have not—that it is no bargain for them to get a $1 hand-out from government which costs them $1.50 in taxes, then they are going to keep on voting for the parties and politicians who will give them that kind of a suicidal deal. Despite the contrary desires of the founding fathers, our country is now operating as a "democracy"—a popular idea, not to say an idol. If a majority decides that water runs uphill or that two and two are five, then God has spoken (in the currently popular opinion), and let any heretic protest at his peril.

Our forefathers—having more wisdom and more humility than we—knew that the clumsy and terrible power of government tends always to be misused. Hence they

did their level best to protect us (weak words being their only available defensive weapons), by specifying limits to government, restricting it to a few tasks which no other institution could very well perform at all. Waging war, running the courts, coining money, providing for the carriage of the mails, and preventing chaos in interstate commerce—such limited functions were about all the founders of the nation believed that the hangman's institution, government, ought to be entrusted wih.

We have traveled a long and costly road since that time, but still haven't learned much from the experience.

The precursors of the present Republicans bethought themselves of using government power to enrich themselves at the general expense through the device of the protective tariff. When government power was thus used to the advantage of such a numerically small group as the manufacturing industry, obviously its use for the benefit of such numerically larger groups as organized labor and agriculture became logical and inevitable. If government hand-outs were to be given to build waterways, highways and airfields for commercial exploitation, then how and where shut off the hand-outs to anybody?

This is the road we are still traveling, and will continue to travel until (1) the nation goes broke, or until (2) a sufficiently large number of individuals to be politically effective develop self-restraint, refusing on principle to seek governmental favors for themselves or to tolerate them for others. This second course is, obviously, the only alternative that can be chosen by those who believe, as this paper does, that our forefathers' idea of the proper sphere of government is the only correct or workable one, in the long run.

What Railroad Men Can Do

Remembering that politics is "the science of the possible," the unlikelihood that the coming presidential election is going to save the nation or send it headlong to destruction must be evident. Where measurable progress *can* be made, or ground lost, is in the election of representatives and senators—depending upon whether more or fewer "big government" advocates are elected to these positions, and to similar positions in the state governments.

There is no doubt at all that business could, in a single election, put the trend toward "big government" completely to rout. But that would take intensive and devoted effort, and would have to begin by each business renouncing the political favors that it receives itself. There isn't much evidence that business has suffered enough, yet, to rise to such a level of heroic behavior.

The really vital votes this November will be those cast for the candidates for the less exalted positions in Congress and the state legislatures. It is within the orbit of every railroad man to be an influence for good in the selection of legislators—both in helping good men to get elected, and in educating those that are elected as to the transportation situation; and how to make it conform to sound political and economic principles.

RENTED AUTOMOBILES—ALLY OF THE RAILROADS

The only objection anybody can offer to today's highly reliable and comfortable passenger train service is the difficulty often encountered in reaching one's ultimate destination when he's gone as far as the trains go.

In this age of decentralization and reliance on the automobile for getting around locally, it can be a real hardship not to have a motor car at destination. Common carrier local transit has been hit so hard by automobile competition that it can afford to operate only on high-potential routes, and maintains convenient schedules only during hours of heavy travel. The fellow without an automobile finds his getting around slow and inconvenient.

The need for an automobile at destination is the principal reason for a very large percentage of long-haul travel by private automobile. The best answer, of course, lies in renting "drive-yourself" automobiles, by which the benefits of train travel for the longer distances are combined with the mobility of the private automobile at destination. Based on personal experience, the editors of this paper can testify that the combination is usually both quicker and less expensive, and always less tiring than driving one's own car cross-country.

The auto rental people quite apparently recognize their community of interest with the railroads. They are linking their substantial and expanding sales efforts to railroad transportation. The auto-rental agencies supply just the one ingredient necessary to make railroad travel wholly attractive and effective in competition with the private auto. It looks like an affiliation which, if pursued with vigor by both parties, will turn out to be a "natural" for both of them. As patronage of the service grows, rental agencies can be established in more and more places—and this is certainly a highly desirable development. If a passenger is going to both Town A and Town B, and only Town A has a car-rental agency, he is still likely to drive his own car. As the service widens its traffic potential grows at an expanding ratio.

USE OF DIESELS—CORRECTION

In an editorial discussion of the increased use of diesel-electric locomotives in our September 1 issue, page 76, a typographical error led to the statement that "the NC&SL and the IC used little diesel power in freight service in 1951." This is of course not correct, as the NC&SL is 100 per cent dieselized. The statement was intended to apply to the *NYC&SL* and the IC.

The faculty for the Illinois Central's home study freight rate course (in the usual order): D. J. Evans, A. L. Belizario, E. G. Cook (standing), L. W. Ohnesorge, and Edmund Mech.

Home Study Rate Course— A Way to Better Customer Relations

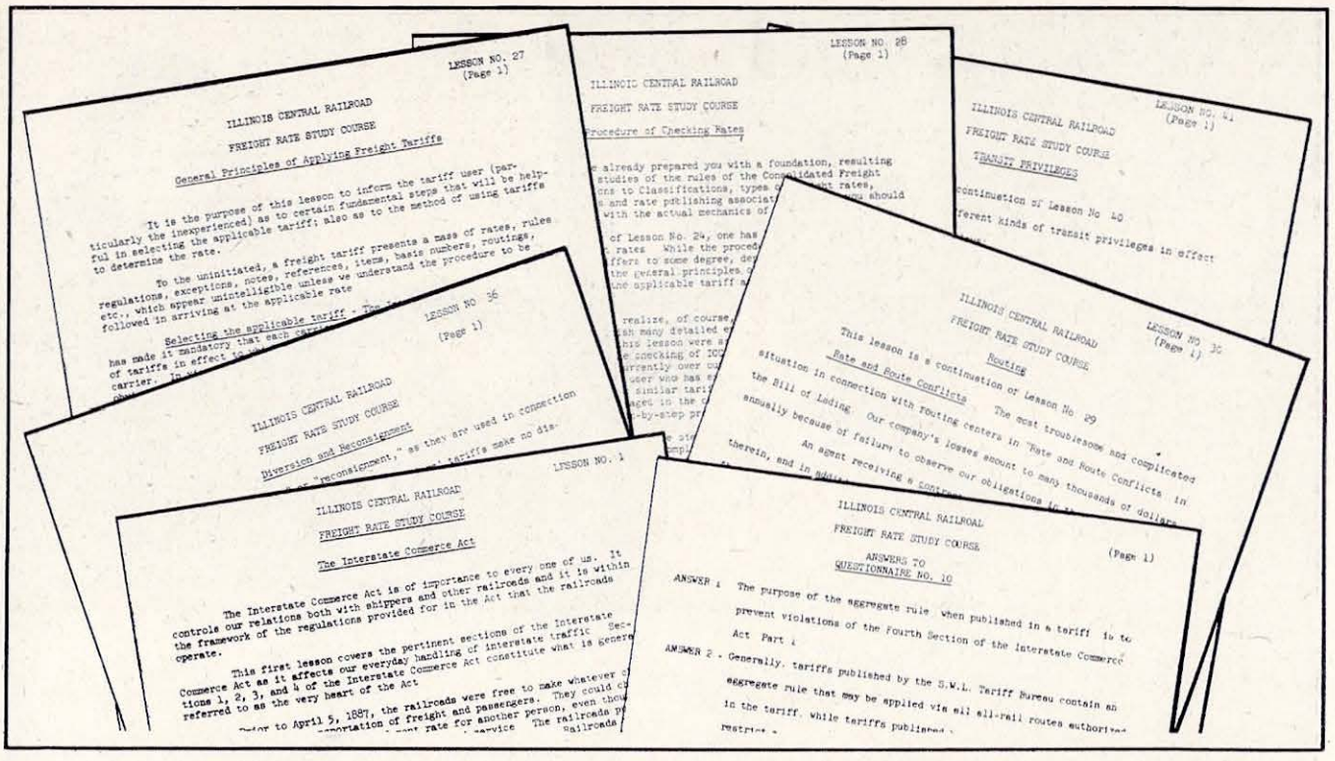
The Illinois Central has been able to improve the accuracy of its freight rate quotations—both to the public and for accounting purposes—through the medium of a recently completed home-study correspondence course created jointly by the operating, traffic and accounting departments, and placed in operation by the revenue accounting department early in 1951. This course has proved an effective tool with which to meet the continuing problem of providing a pool of properly trained rate clerks for job openings, and the problem of refreshing those already engaged in rate work in the proper and efficient use of the tools of their trade. In the 18 months since its inception, 1,055 employees—including agents, rate clerks, traffic men and operating employees—have completed the cost-free course.

In undertaking this project the Illinois Central has made a strong effort to eliminate overcharges and undercharges requiring corrective billing and readjustment of divisions—a costly procedure. The course has also helped IC employees to build shipper good will by more prompt, accurate quotation of rates through improved proficiency.

The full course of 43 lessons was ended last April. For the present it is not anticipated that it will be reoffered, but plans are underway to supplement the lessons already completed with additional material covering the new classification tariffs (I.C.C. Docket 28310).

The idea for a course on freight tariffs was originally conceived by Edmund Mech, auditor of freight receipts, who has directed its preparation and operation. A home-study correspondence type of training program was selected because of the difficulties involved in bringing interested employees to central points at frequent intervals for classroom instruction. It was also desired to have the program penetrate all parts of the system—even remote stations and off-line traffic agencies. Although primarily designed for traffic men, station forces and accounting department employees, the complete course was offered to employees of all departments. The number of students who started but did not complete the course was very small—indicating a high degree of interest on the part of the students.

The lessons were not designed nor intended to make freight rate experts out of the students, but to give them



ILLINOIS CENTRAL RAILROAD
FREIGHT RATE STUDY COURSE
General Principles of Applying Freight Tariffs
LESSON NO. 27 (Page 1)

ILLINOIS CENTRAL RAILROAD
FREIGHT RATE STUDY COURSE
Procedure of Checking Rates
LESSON NO. 28 (Page 1)

ILLINOIS CENTRAL RAILROAD
FREIGHT RATE STUDY COURSE
TRANSIT PRIVILEGES
LESSON NO. 41 (Page 1)

ILLINOIS CENTRAL RAILROAD
FREIGHT RATE STUDY COURSE
Diversion and Reconsignment
LESSON NO. 36 (Page 1)

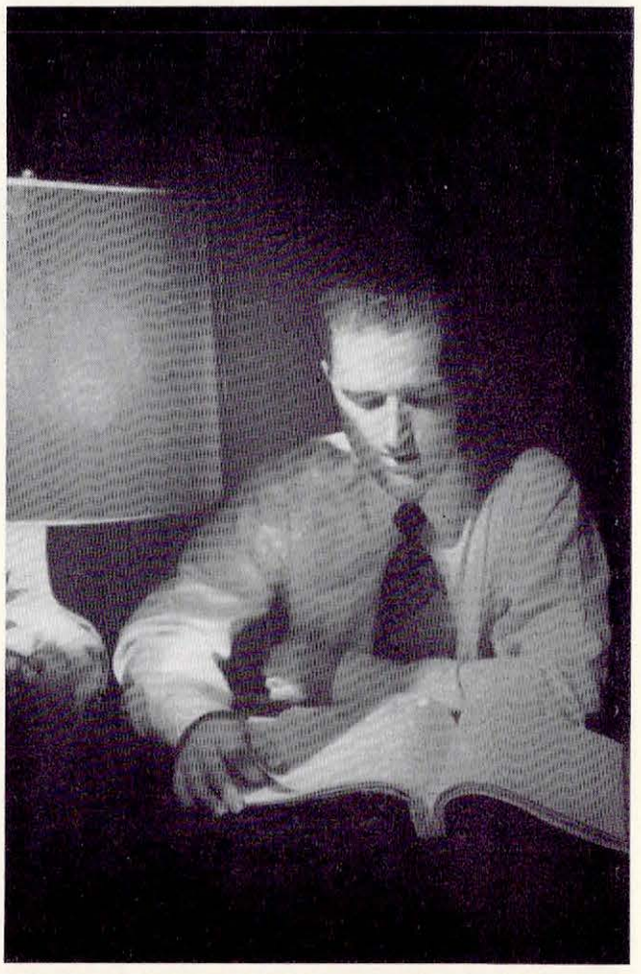
ILLINOIS CENTRAL RAILROAD
FREIGHT RATE STUDY COURSE
Routing
LESSON NO. 30 (Page 1)

ILLINOIS CENTRAL RAILROAD
FREIGHT RATE STUDY COURSE
The Interstate Commerce Act
LESSON NO. 1

ILLINOIS CENTRAL RAILROAD
FREIGHT RATE STUDY COURSE
ANSWERS TO QUESTIONNAIRE NO. 10
(Page 1)

The course, consisting of 43 lessons, 10 questionnaires and answers, was prepared and distributed as a cooperative project of the accounting, traffic and operating departments.

Getting the answers is H. A. Madison of Danforth, Ill., one of the many IC agents who took the freight rate course.



Over 1,000 Illinois Central employees voluntarily studied freight rates at home, on their own time.

The accounting department does not feel that it is too optimistic in expecting a large reduction in overcharges and undercharges, as all employees obtain a better understanding of freight tariffs.

the basic background and fundamental methods needed to understand the use of freight tariffs.

The preparation of the lessons, handling the questionnaires, maintaining student progress records, correspondence and mailing lists was all handled by a crew of three men, reporting to Mr. Mech: D. J. Evans, chief traveling rate supervisor, and A. L. Belizario and L. W. Ohnesorge, traveling rate supervisors.

"We started the course with only six completed lessons, and worked out the rest as we went along," Mr. Evans explains, "and sometimes we were rushed to complete a lesson in time to meet the mailing deadline. We have tried to write the best freight rate study course in existence, couched in language a layman can easily understand. Each lesson contains many examples which the student can use in following the step-by-step development of the subject. Of those we have seen, we believe this course is more comprehensive than anything comparable so far undertaken by any other railroad."

Wide Employee Interest

The course was announced by a circular, with an enrollment blank attached, which was distributed to all employees through traffic officers, superintendents, freight agents and off-line agencies. Interest in the course permeated the whole railroad to the point where enrollment included trainmasters, telegraphers, ticket clerks, switchmen, warehouse foremen and general clerks. Many of these employees are not connected with rate work, but saw in the course a chance for self-improvement and thereby greater opportunity for advancement.

Each lesson consists of four to ten mimeographed pages of reading material, liberally sprinkled with examples and illustrations of the points being discussed. The lessons were sent out from Chicago each Wednesday morning by railroad or U. S. mail, so that each employee would receive his in time to study over the weekend.

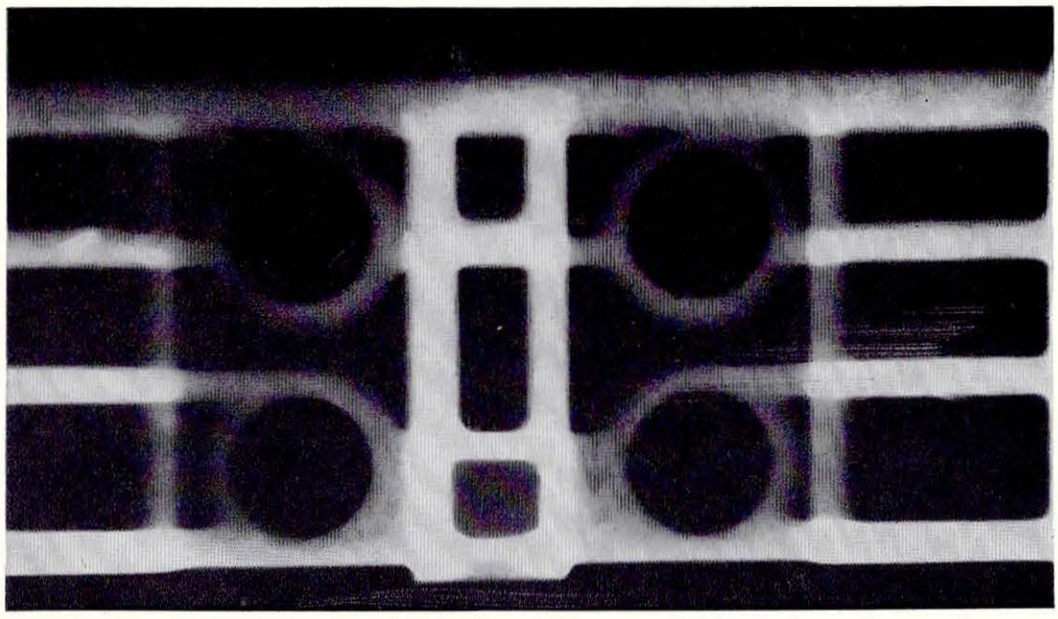
Questionnaires were released every fifth week reviewing material previously studied. When a questionnaire was returned (students were not required to return them—but many did), a set of correct answers was returned along with his checked and graded questionnaire.

Subjects Studied

Among the subjects covered by the course are the Interstate Commerce Act, freight classifications, exceptions to classifications, different types of rates, freight rate territories and their publishing associations, general principles for applying freight tariffs, procedures for checking rates, routing, intermediate point rule—their purpose and application, aggregate of intermediates, combination rates, and I.C.C. tariff circular No. 20. The final lessons treated the subjects of diversion and reconsignment, perishable freight, transit privileges and methods of filing tariffs.

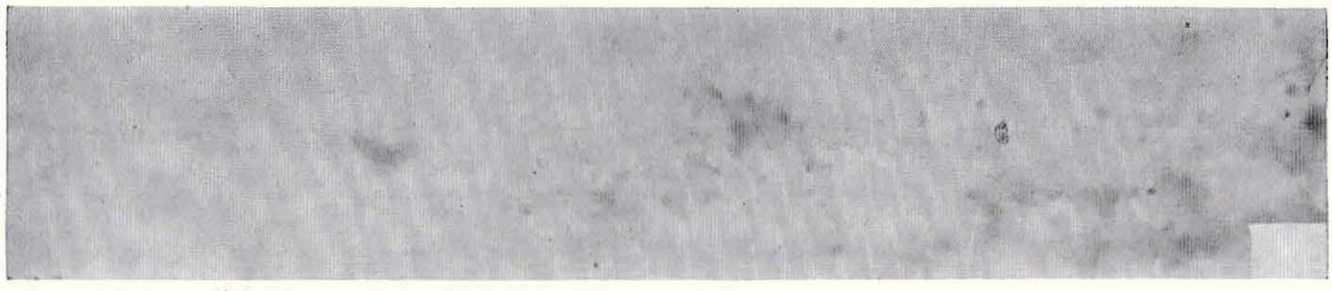
The course has proved so successful, and has met with such widespread favorable reaction, that the individual lessons together with the question and answer sheets are now being assembled into a booklet. In the interest of benefiting the railroad industry as a whole, the Illinois Central will furnish copies of these booklets to freight auditors of other railroads. The course will also be used to meet future needs in training new IC personnel.

Approximately 50 traffic, operating and accounting officers of other railroads already have become interested in this Illinois Central home training course, and are studying it for possible application on their own railroads.



(Left) Radiograph of a draw bar stop.

(Below) Quality of metal in a freight car coupler yoke as shown by a Cobalt-60 radiograph.



Cobalt-60 for Testing Castings

Southern Pacific finds new method of non-destructive testing effective and much cheaper than radium or X-ray equipment

Radioactive cobalt in the form of an isotope, known as Cobalt-60, is now being used by the Southern Pacific for exploring the quality of metal parts. It provides a non-destructive method of testing castings, weldments, etc., and is much cheaper than radium. The tests are made by placing a number of parts to be tested in a ring around a small capsule of Cobalt-60. X-ray films in envelopes which are opaque to visible light are taped to the back of the parts under test.

The Cobalt-60 has replaced radium for this kind of radiography. For this purpose, a small piece of Cobalt-60 is used, which is contained in a capsule measuring approximately 5/16 in. by 1¼ in.

The method is now being used for checking freight car castings. These include coupler yokes, couplers, coupler knuckles and truck side frames. This is done to samples picked at random.

The cost of the quantity of Cobalt-60 used is about $125, but procurement is subject to approval from Atomic Energy Commission. This high energy source of gamma rays is equivalent to more than $15,000 worth of radium.

In comparing the gamma-ray intensity of Cobalt-60 with that of radium, theoretically 1 millicurie of Cobalt-60 will equal 1.55 milligrams of radium. Authorities on radioactive isotopes quote a factor 1.35 milliroentgens per hour for each millicurie of Cobalt-60, when measured at a distance of 1 meter or 39 inches. The amount of Cobalt-60 in the capsule described above is approximately 620 millicuries, which has an emissivity of 900 milliroentgens per hour at 39 inches and half-life of 5.3 years.

Placement for Radiograph

In practice, the parts to be explored are placed at that angle to, and distance from, the cobalt, which in the opinion of the operator will make the best radiograph. The greater the distance, the sharper will be the outline of blowholes, cavities, etc. X-ray films in cassette

envelopes are taped to the back of the specimens under test. Lead foil on both sides of film in the cassette reduces the amount of exposure required, since secondary electrons produced in the lead screens by the incident gamma rays, affect the film more readily than the gamma rays themselves.

The exposure required varies according to the distance from the capsule and the thickness and character of the metal. A section of steel, 1 in. thick, at a distance of 6 ft. requires about 16 hours exposure, using a gamma ray source of 900 milliroentgens. The time required to radiograph the valve shown in one of the illustrations is about 1½ hour.

When not in use, the cobalt capsule is kept in a spherical lead container 6 in. thick (12 in. in diameter). The container has a 6-step conical door (see illustration), which permits using the capsule in a limited area, if left in the container, without exposure of the operator to radiation, if he remains to the rear of the container.

The usual procedure consists of arranging parts to be tested in a circle with the capsule in the center. Two exposures are frequently made with the part being tested placed at different angles to show the shape and character of inclusions of foreign material, blowholes and shrinkage cavities.

Various sizes and shapes of films are used. These include 8-in. by 10-in., 4-in. by 17-in., 3½-in. by 17-in., 14-in. by 17-in., 4½-in. by 10-in. films and others. The cassettes may be formed to fit the contour of a casting.

The experience of the Southern Pacific shows that this method of testing provides means of assuring good quality castings. It is particularly valuable because it is a non-destructive method.

The lead container or bomb for the cobalt capsule weighs 450 lb. and assures complete protection to operators for an indefinite time. To provide adequate protection for shorter periods of time and permit easy portability, the capsule may be carried in a container 1-in. thick. When not in use, the 1-in. container is stored within a much heavier one.

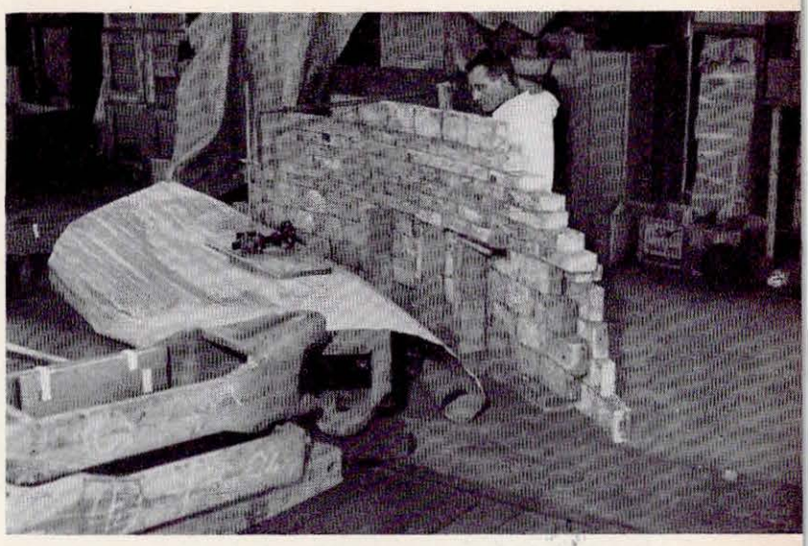
Safety Precautions

Working within the allowable tolerance of 300 milliroentgens per week, a radiographer using a handler which requires him to approach no closer than six feet to a 500-millicurie source, could well make over 150 exposures per week, providing he remained only 30 seconds for setting up and removing the source for each exposure.

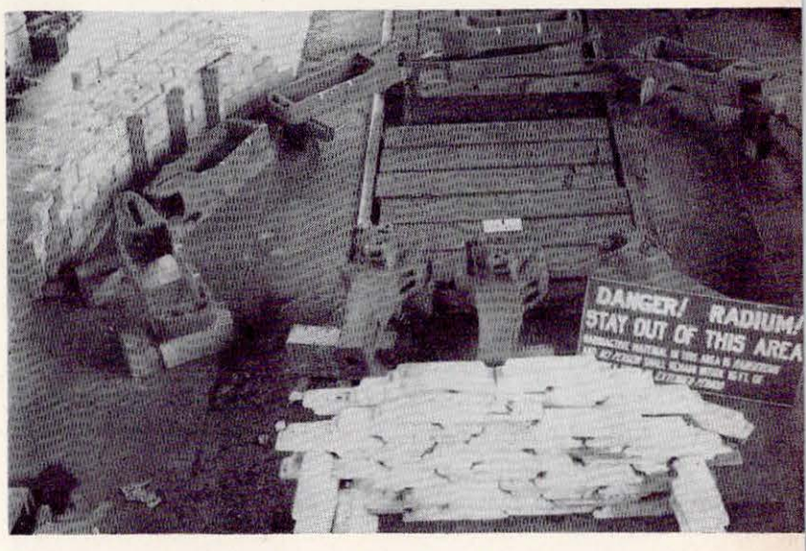
Safety precautions governing handling of radioactive materials must be carefully followed. Equipment for this purpose consists of an all-purpose ionization chamber survey instrument with multiple ranges up to 50,000 milliroentgens per hour. Pocket type dosage meters are also used to determine total radiation exposure to comply with industrial safety regulations. Tests are usually made at night. The building in which they are made is segregated and posted as required by law.

A lead brick wall is used to shield the operator when placing the capsule on certain jobs. A pair of long tongs, or a permanent magnet holder, is used for handling the capsule.

The work is being done by J. C. Bristow, senior chemist of the Southern Pacific, under the supervision of B. F. Kline, the road's chief chemist at Sacramento, Cal. This is a function of Southern Pacific's Test Department headed by the engineer of tests, P. V. Garin, at San Francisco.

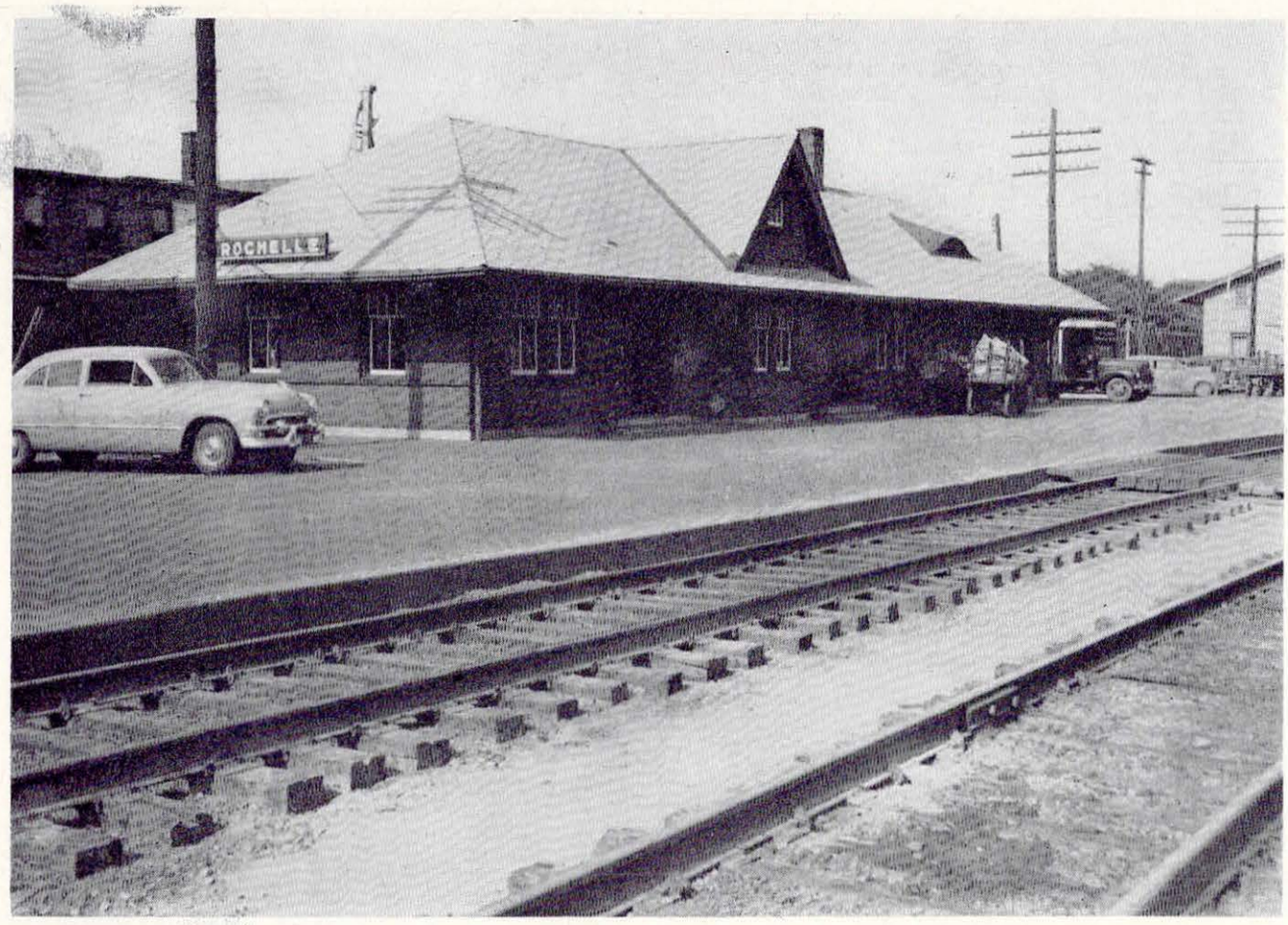


From a position behind a protective lead brick wall, the operator, J. C. Bristow, is placing the capsule for testing a valve.



The usual method of testing consists of placing a circle of parts under test around the capsule. To permit taking the picture, a small piece of steel rod, shown on the paper, was used in place of the capsule.

The capsule of Cobalt-60 being removed from the protective container or bomb.



Removing crib ballast alongside station platforms has heretofore been an expensive maintenance chore usually performed by hand.

On the North Western . . .

Cribbing Machine Proves Worth

Drainage of tracks, especially through station platforms, improved by mechanized method of removing dirty ballast from between ties

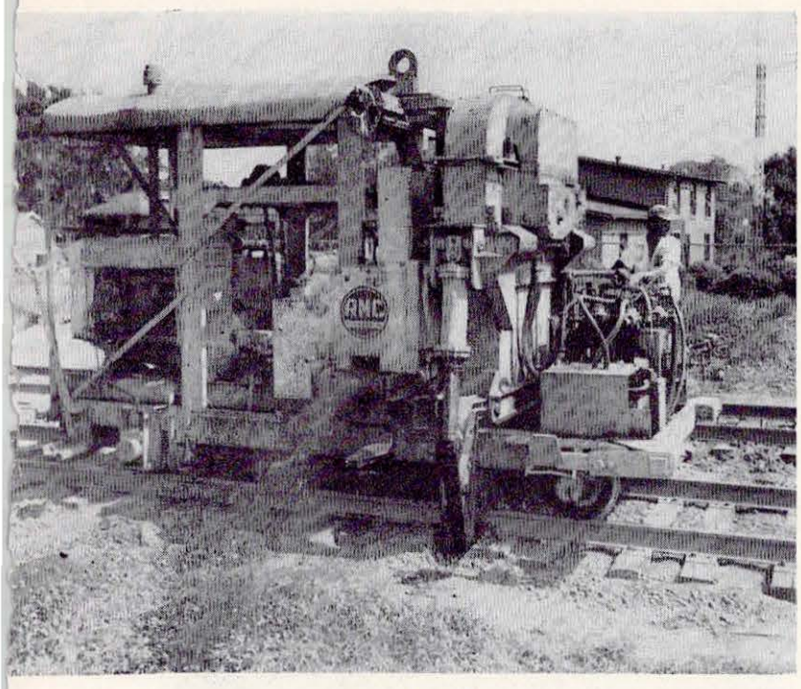
Substantial economies have been realized in replacing deteriorated ballast in tie cribs on the Chicago & North Western through selective use of a McWilliams "cribber." This device, manufactured by the Railway Maintenance Corporation of Pittsburgh, is an on-track, self propelled unit which is designed either to clean ballast it excavates from the tie cribs and then return it to the track, or to "strip" the cribs, wasting the dirty ballast alongside the track.

On the North Western, the machine has been used almost exclusively for the latter purpose.* It was originally planned to use the unit for "improving drainage by cleaning crib ballast wherever it might have become fouled." It was soon found, however, that tracks through station platforms and adjacent areas were the ones most in need of attention. Because the types of ballast used in such areas were unworthy of being cleaned and returned to the track, the ballast is seldom cleaned. Instead, it is wasted and replaced with new ballast of a better type.

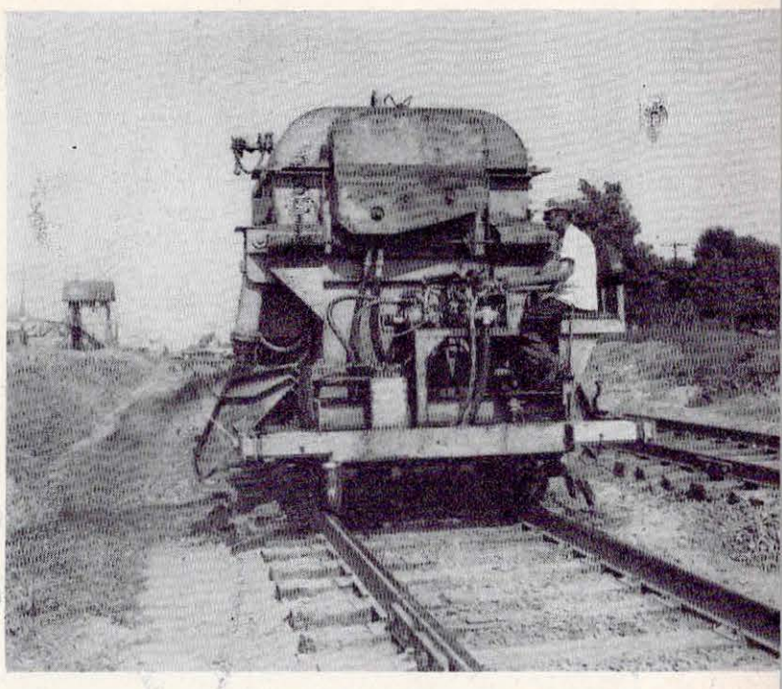
*A detailed article describing how the work was organized appears in the September issue of *Railway Engineering & Maintenance.*

Formerly Hand Work

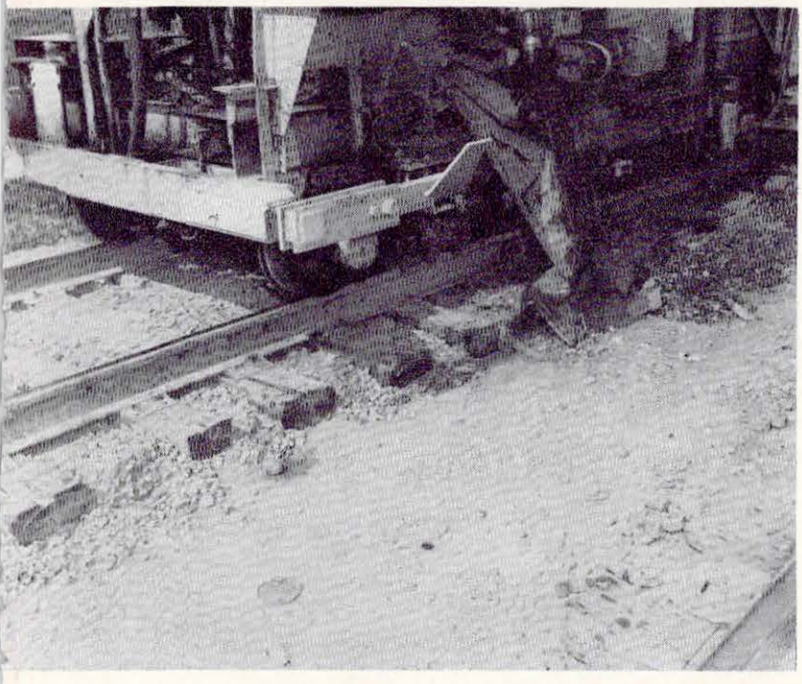
Heretofore, work of this nature, or most of it, had to be done by hand, at a very high unit cost. For instance, a test made by the North Western a few years ago showed that one man could remove the ballast from an



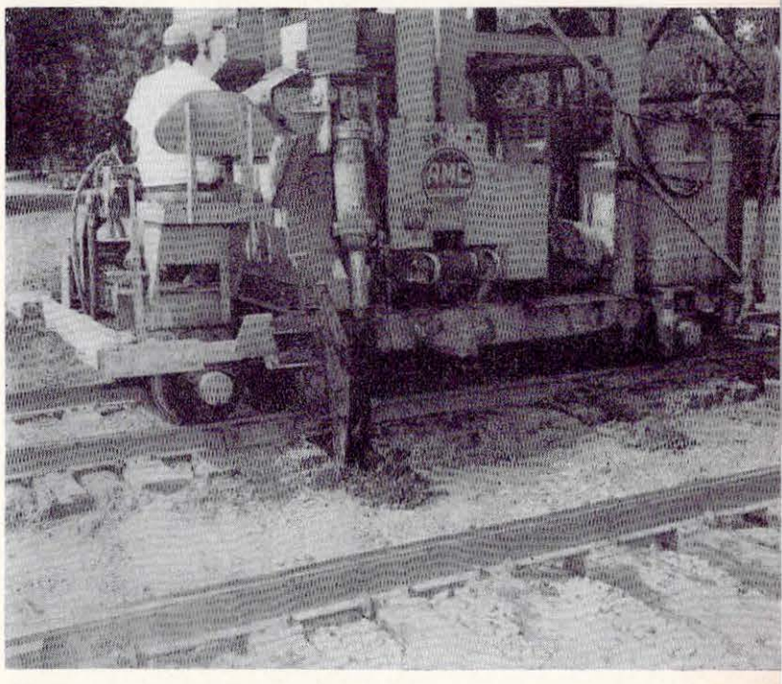
McWilliams cribber has demonstrated in almost three years' service on the North Western that it can save an average of 50 cents per crib. Even greater savings are anticipated when conditions warrant the use of the cribber in open track.



Cribber works in three steps: (1) Bucket conveyor excavates ballast in crib between the running rails; (2) hydraulic rams push the remaining ballast inwardly under the rails; so (3) it can be picked up by relowering the bucket conveyor.



In step one, hydraulic rams on each side of machine are extended beyond the ends of ties awaiting the removal of the crib ballast between the rails.



Steps two and three are repeated until crib ends are clean. If ties are slewed, the ram on the "tight" side cannot be operated.

average of two cribs per hour. At present labor rates that means approximately 75 cents per crib.

In contrast, during a typical two-month period in 1950, the McWilliams machine "stripped" 3.91 miles of track (12,730 cribs) at an average rate of 76.4 cribs per hour of operation. The average cost of this work was 18.3 cents per crib. Allowing for increased costs since 1950, it can be seen that the use of the cribber is saving an average of more than 50 cents per crib.

To date the mechanical cribbing has been done where the need has been greatest. This has generally been in heavy-traffic territory where opportunity for track usage by the machine has been least. In the case cited above, the machine could only work 166 hours in 45 days, or an average of 3 hr. 42 min. per day. Consequently, when conditions warrant the use of the cribber in open track as an adjunct to reballasting programs, even greater savings are anticipated.

Northern Alberta yard at Waterways (McMurray), Alta., 305 miles north of Edmonton, where most of the inbound and outbound traffic for the North West Territories is transhipped between barges and rail cars.

Northern Alberta Railways . . .

Path to Alaska and Radium

The most essential ingredient for all of the United States' atomic bombs and related H-bombs since the first was made, and for Canada's atomic pile at Chalk River, Ont., has moved over the Northern Alberta, the railway in Canada which reaches farthest north (with the exception of the White Pass & Yukon and the Hudson Bay railway). From Port Radium, near the Arctic circle on Great Bear Lake, scarce pitchblende has moved in quantity since the early 1940's some 1,400 miles southward up the Mackenzie-Great Slave Lake-Athabaska river system to Waterways (McMurray), Alta., northern terminus of the NA. Here it is transshipped into railroad cars to be moved 305 miles to Edmonton for connection with the CNR and CPR and movement beyond, "care of" the Canadian or U. S. governments.

The NA is notable also as the link between Edmonton and the southern terminus of the Alaska-Yukon highway, at Dawson Creek, B. C.

This notable avenue to booming Alaska and the North country is made up of what were once four separate railways, built out from Edmonton to garner the lumber, grain and minerals of the Peace River country and the sub-Arctic. High costs in World War I made it difficult for them to survive independently and the province of Alberta took them over. In 1920 the CPR leased them for five years, and operated them for account of the owners. In 1926 the lines were turned back to the province.

Finally, in 1929, the CPR and the Canadian National jointly acquired the lines, through a new company called the Northern Alberta Railways, each trunk line purchasing half the stock. Today the NA's board of directors is comprised half of CPR representatives and half CNR. The presidency alternates between the presidents of the two parent roads. The NA has, however, its own general manager and a complete staff under him. With 923 route-miles, it is the third largest railway

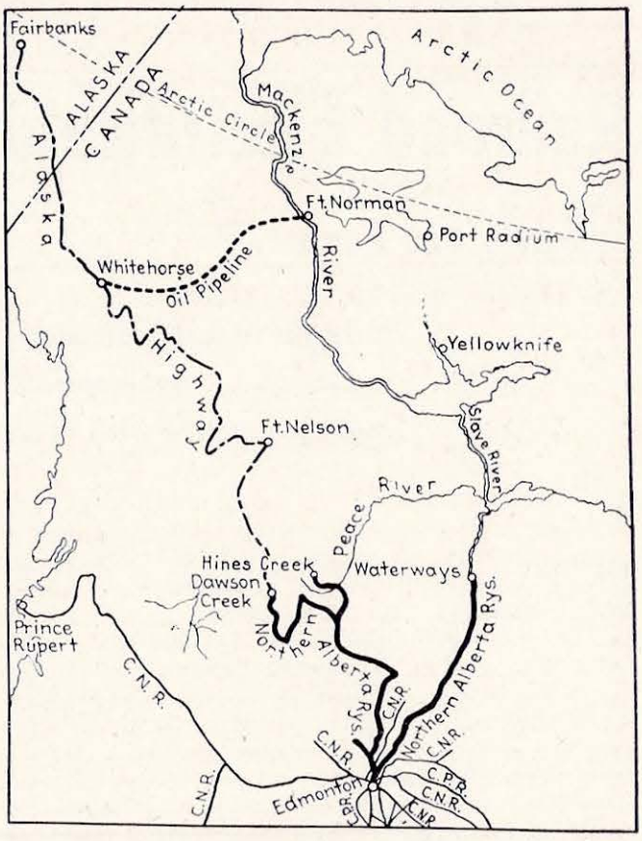
This Consolidated gold mine at Yellowknife, N.W.T., is typical of the kind of development—served by air and water—for which the NA is the southern gateway.

in Canada. A total of 17 locomotives (all steam), 27 freight cars, 36 passenger cars and 198 service cars are owned by the road. Equipment from the owner lines is rented during peak periods.

The "new north" to which the NA is the key is one of the dramatic boom spots of the world today. New mineral riches are being discovered every day, in a vast territory served chiefly by canoe and by bush airplane. There is much talk of rail extension from the NA into territory which is just beginning to have economic value —including links from the Peace River farming country, through rich coal fields, to the CNR's Prince Rupert line and the Pacific Great Eastern, and north from Waterways to Great Slave lake.

The chief transportation artery for the "new north" is the Mackenzie river system which, despite the difficulties of navigation and a major portage, carries a steadily increasing tonnage. The so-called "Alcan" or Alaska highway, built by the U. S. during the war and now vested in Canada as far as the Alaskan border, also continues to carry a fair amount of freight and passenger travel—although, contrary to popular belief, it was located specifically to supply and link a string of strategic wartime air bases, and not to serve as an efficient artery for bulk transport. Air movement of both passengers and freight—including the pioneering routes of Canadian Pacific Air Lines, Ltd.—is also surprisingly heavy in proportion to the population of the area.

For all of these roads to the north, the NA is the in-



The Northern Alberta, third largest railway in Canada, is the indispensable link to the "new north." Pitchblende from the Port Radium area is a vital item of freight.

dispensable mass-mover link between Edmonton and the "take-off," as clearly shown on the map. In addition, it is the agency responsible for the progressive settlement of the fertile Peace River grain country, which is also becoming recognized as well-suited for mixed farming.

Wartime Impetus

World War II sparked development of the "new north" far beyond the normal pace, because of the need for speedy build-up of defenses against Japanese invasion from the north. For this, the Alcan highway was built; the Canol pipeline was pushed from the wells at Fort Norman to Whitehorse; a string of vital airbases were bulldozed in the tundra, and a feverish search for uranium ores, and exploitation of Port Radium, pursued. For all of them, the material and the men moved over the NA. And when the Canol pipeline was dismantled, after the war was over, the disconnected lengths moved back down over the NA.

As the indispensable link, the railway was the scene of terrific activity during the early years of World War II. High priority was given by both the Canadian and U. S. governments to the NA's acute need for additional equipment—especially when experience showed that the existing highway between Edmonton and Dawson Creek was unsuitable for freight trucking. With the help of the parent companies some 30 locomotives were added to the roster, bringing the total to 46 by the year 1944. Revenues shot up from $2.1 million in 1939 to $11.1 million in 1943. Ton-miles increased from 137.0 million to 359.6 million; passenger miles zoomed even higher—from 8.7 million to 76.4.

Dawson Creek mushroomed overnight from a population of 800 to more than 5,000. Whereas, before the war, two passenger trains a week to and from Edmonton were sufficient, by November 1942 the service was made daily and sleepers and diners were put on the run—and continued ever since. During 1943 and 1944, daily trains often had to be operated in two sections, with 14 to 16 coaches each, exclusive of freight cars. During all this time, the local output of grain and livestock of the Peace River country increased tremendously, some 3,502 carloads of cattle being carried in 1942 alone. With the flow of men and materials to build the 500-mile Canol pipeline, the eastern branch of the NA also experienced a war boom, and the Waterways rail-river transshipment facilities were progressively enlarged to handle unprecedented tonnages.

After the war, passenger traffic on the NA dropped sharply from the feverish levels of 1942 and 1943. Nevertheless, in 1950 passenger miles were still twice the traffic enjoyed in 1939, despite the building of new highways in the railway's territory. While freight traffic declined considerably after the completion of the Alcan and Canol prospects, it has, since the end of the war, built up again steadily as the country developed. In 1948 freight traffic reached 368.8 million ton-miles, an all-time high, exceeding even the levels of 1942 and 1943. In 1950 it totaled 324 million ton-miles.

The "radium road" is just beginning to live.

Railroad Electrification . . .

What's Its Future?

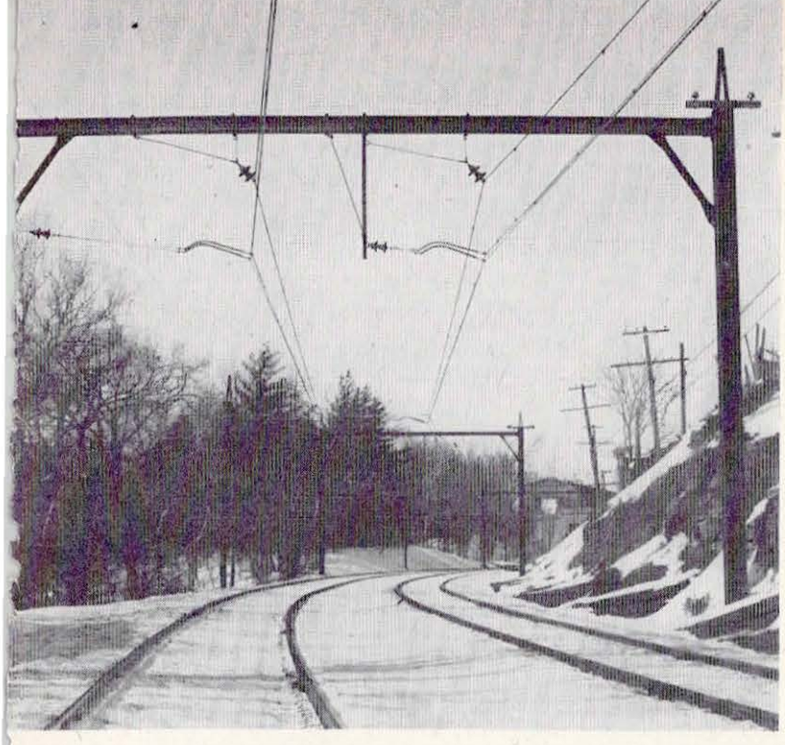
Battelle report indicates that cost of installation can be reduced and that electrical operation may become increasingly attractive with future rise in the cost of liquid fuel

At some time in the future we can probably expect an expansion of railroad electrification in the United States, according to a study initiated at Battelle Memorial Institute, Columbus, Ohio. The greatest present obstacle is economic, but it would appear that first cost may be reduced by pooling engineering facilities, by simplifying means of financing and by adopting a high-voltage a.c. distribution system along with d.c. locomotives which can take advantage of the quantity production methods developed in the manufacture of diesel-electric locomotives. Any relative increase in the price of liquid fuel would, of course, add to the attractiveness of electrification.

The study was made by a group of men experienced in railroad electrification and sponsored by seven railroads, five coal producers, seven electrical equipment manufacturers and one utility company.

Electrification Relatively Small

The report points out that although no form of motive power for railroad use has yet been able to match the physical operational characteristics of the electric locomotive, electrification has been confined to a relatively small amount of railroad mileage in the United States. It is generally recognized that the most important obstacles to its expansion are fundamentally economic in nature. The objective of this research project has been



to determine the possibilities of overcoming these economic obstacles.

In the research program, an analysis was made of the investment cost of the various components for an electrified railroad, and efforts were concentrated on methods for the reduction in the costs of those which made up the greatest part of the total cost. For purposes of evaluation, the costs of various suggested developments that were studied were compared with those of a cost estimate of electrification using 3,000 volts d.c. on a 400-mile section of a multiple-track railroad. Comparative costs for this railroad using steam and diesel-electric motive power were also available.

In addition to the search for methods for reduction in the capital cost of electrification, comparative data were assembled on the operating costs of the three forms of motive power.

A survey was also made of the outlook for the supply and the cost of coal, diesel oil, and electricity, for the period 1950-1970.

Conclusions Reached

Conclusions developed by the study are as follows:

1. Three technical suggestions appear to be feasible and warrant further investigation. They are:

(a) The distribution of electrical energy to the motive power at a contact-system potential of 24,000 volts a.c. to permit greater spacing of substations and lighter contact systems and supporting structures than are conveniently employed.

(b) The use of the standard commercial frequency of 60 cycles for the contact system to permit static conversion of power from three phase to single phase.

(c) The use of traction motors, control equipment, running gear, and other components of diesel-electric locomotives which are now in mass production.

2. The application of the foregoing to the 400 miles of multiple-track railroad considered would give a total investment cost for electrification, based on purchased power, of $150 million, as compared with $167 million for a 3,000-volt d.c. system, both in terms of costs in 1950. This is a reduction of ten per cent.

3. In 1945, the estimated totals of the operating costs and the fixed charges on the capital investment for a given volume of traffic on the 400-mile section of railroad were $26.3 million for electric locomotives using 3,000 volts d.c. and $27.6 million for the diesels. Applying the suggested developments at 1950 cost levels, the estimated annual totals for the same volume of traffic are $37.8 million for the 24,000-volt a.c. system and $41.1 million for the diesel. The 1945 estimate of annual return was 5.45 per cent on the incremental capital investment required for 3,000-volt d.c. electrification, as compared with dieselization. However, at 1950 costs, this return has dropped to 3.01 per cent. The decreases in capital investment and annual costs that would result from the application of the suggested technical developments result in a return of 8.33 per cent.

Twenty-Year Fuel Outlook

4. The fuel outlook for the next twenty years, assuming conditions of peace, is for ample supplies of coal and probably ample supplies of liquid fuels, although, toward 1970, coal and oil shale, rather than petroleum, may be the primary raw materials for liquid fuels.

Under wartime conditions, the supply of all liquid fuels for the domestic economy will be extremely tight and the quality of diesel fuels for railroad use will probably deteriorate.

5. By 1970, electric power costs in terms of the 1950 dollar will be possibly as much as 10 per cent below present levels, whereas diesel fuel costs are expected to increase by possibly 25 to 50 per cent.

6. Four technical ideas have been proposed for investigation, but have not been evaluated:

(a) A new principle of cab signaling.

(b) High-frequency transmission of railroad communications.

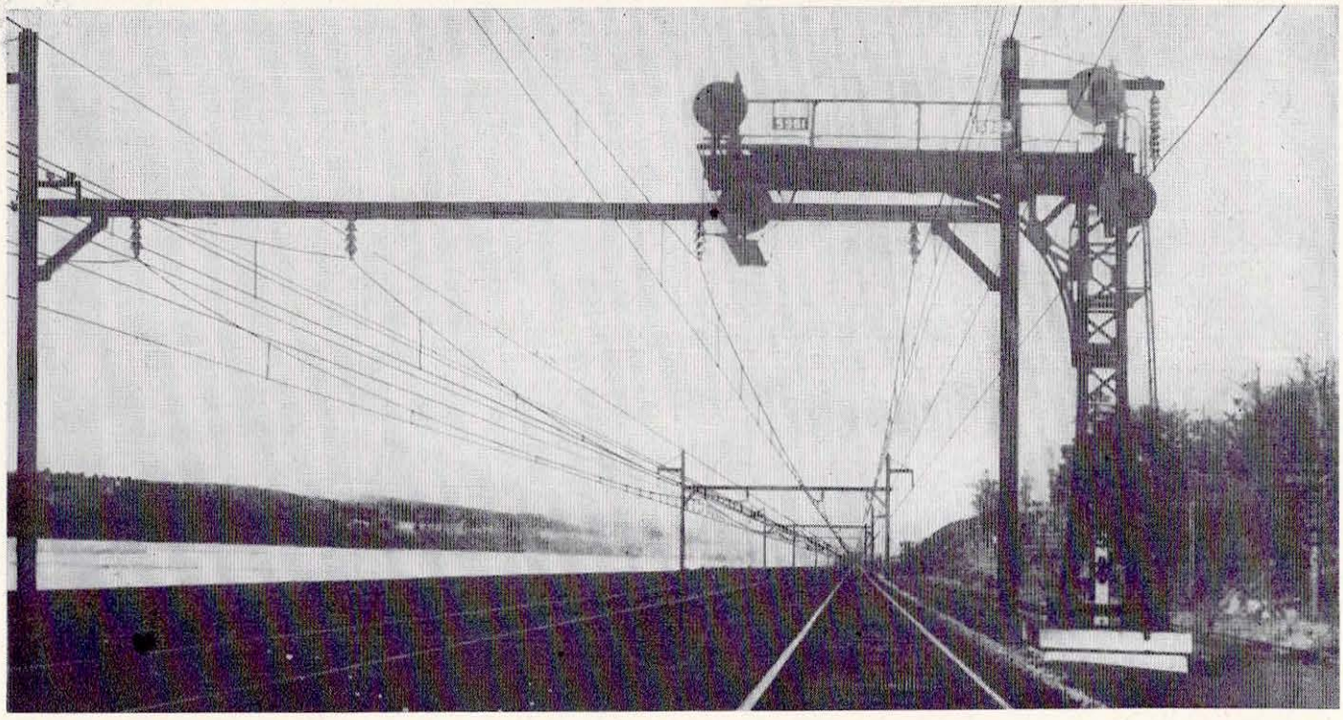
(c) A new design of pantograph.

(d) Improved designs of motive power for use with 24,000-volt, 60-cycle a.c. contact system.

7. Brief studies were made of the following non-technical features of railroad electrification:

(a) Improved plans for financing the capital investment.

(b) Plans to mitigate risks to investors in railroad



electrification now imposed by legal custom and by legislation.

(c) Plans for the combination of the functions of engineering and construction of railroad electrification in one agency available to any railroad.

The report also makes the following recommendations for future research:

The magnitude of the decrease in investment and operating costs of railroad electrification that is possible through the application of the suggested technical developments that were studied, coupled with the promise of further technical developments and the likelihood of relatively greater increases in the cost of diesel fuel as compared with that for electric energy, warrants a continuation of the program of research. This program should be divided into four phases as follows:

Avenues of Future Research

1. The search for technical developments that would decrease further the investment and operating costs should be continued intensively, and those principles that have been suggested should be studied experimentally.

(a) The principle of cab signaling should be subjected to experimental investigation to develop it so that the potential dollar savings over present signaling systems could be evaluated.

(b) The practicability of the use of high frequencies for the transmission of railroad communications should be determined, to fix the savings possible in the present cost of communications and inductive coordination.

(c) Engineering research should be conducted on the design of a locomotive pantograph that would impose less force on the contact system than present conventional designs.

(d) Research should be conducted on technical methods for reducing investment and operating costs of motor-generator and ignitron-type locomotives.

2. Detailed studies should be made of the contact system and power-conversion substations that have been proposed. These would include:

(a) A detailed design of contact-system supporting structures to permit maximum standardization of component parts.

(b) A detailed outline of "off-track" construction and erection methods for the contact system and its supporting structures.

(c) A detailed study of power conversion stations.

(d) A detailed analysis of station performance, particularly with respect to problems which might be encountered through switching inductive and capacitive reactances.

3. A continuing survey of the fuel situation should be conducted, with periodic reports to the sponsoring group on new developments in fuel reserves and methods of production.

4. The non-technical but highly important financial and legal questions that affect the feasibility of railroad electrification should be further studied. They include:

(a) The possibilities of plans for cooperative financing by insurance companies, banks, manufacturers, coal producers, and other interested organizations.

(b) The development of data to support changes in legal procedure and in legislation in regard to prior mortgages and to the power of bankruptcy courts to foreclose mortgages. These now do not encourage railroad electrification.

(c) The development of a plan for an organization that would combine the functions of engineering, design, and construction of railroad electrification which would be available to any and all railroads, and thus would reduce duplication of effort and cost.

The report is available at $1.00 a copy from Edison Electric Institute, 420 Lexington Avenue, New York 17, N. Y., or from Bituminous Coal Research, Inc., 2609 First National Bank Building, Pittsburgh 22, Pa. A very limited supply of the complete report, with appendices, is available from Edison Electric Institute at $10.00 per copy.

Marking 100 Years of

Engineering Progress on the Railroads

Advances reviewed in addresses by Fred G. Gurley and H. R. Clarke, both at meetings held in Chicago as part of the Centennial of Engineering celebration

Much of the credit for the advances in railroading during the past 100 years—and for the role these advances have played in the nation's industrial and social progress—was assigned last week to the railroad engineering profession, the term being used here to encompass all branches of engineering—civil, mechanical, electrical, signal and communications. The occasion was the participation of railroad engineers in the Centennial of Engineering, an event centering in Chicago which was designed to commemorate the founding in 1852 of the first national engineering society, the American Society of Civil Engineers.

This development of the importance of the contribution of railroad engineers, in the broad sense, was primarily accomplished through two addresses by railroad men. One, entitled "The Role of the Railroads," was made by Fred G. Gurley, president of the Santa Fe, at a railroad session of a transportation symposium. This discussion was presented in the grand ballroom of the Conrad Hilton Hotel in Chicago on the morning of September 8 to an audience of about 850. The other address, entitled "Contributions of Railroad Engineers to the Welfare of the Country over the Last 100 Years," was made by H. R. Clarke, chief engineer of the Burlington lines, at a banquet in the Palmer House on the evening of the same day.

This activity occurred in connection with a convocation of engineers which was a major phase of the Centennial of Engineering celebration. The convocation, which lasted from September 3 to 13, brought to Chicago representatives of 64 national and international engineering societies and 22 foreign nations, estimated to total 30,000 persons. The program included about 290 separate technical sessions at which more than 1,000 addresses were presented by engineers and scientists from all over the world.

Railroad participation in the event was spearheaded by the American Railway Engineering Association. To implement this participation, the A.R.E.A. arranged for 21 of its standing and special committees to hold their fall meetings at Chicago's Palmer House in the period from September 8 to 10, for which the total registration consisted of 499 members and 52 guests.

All meetings of A.R.E.A. committees were scheduled to permit their members to attend the railroad session of the transportation symposium to hear Mr. Gurley's remarks. The other major event from the railroad standpoint was the banquet on Monday evening, which was sponsored by the A.R.E.A., and at which Mr. Clarke was the principal speaker. The banquet was a railroad engineering event in the broadest sense, for invitations to attend had been extended to members and affiliated members of the Mechanical Division and of the Signal, Electrical and Communications Sections of the Association of American Railroads, as well as to members of the Railroad Division, American Society of Mechanical Engineers, and to members of the National Railway Appliances Association.

Railway Expansion Reviewed

Mr. Gurley repeatedly emphasized the significant fact that the growth of the railroads, and their contributions to the national welfare, have occurred in an atmosphere of free enterprise, which is the "only economic system under which the full capabilities of men and industry can be realized."

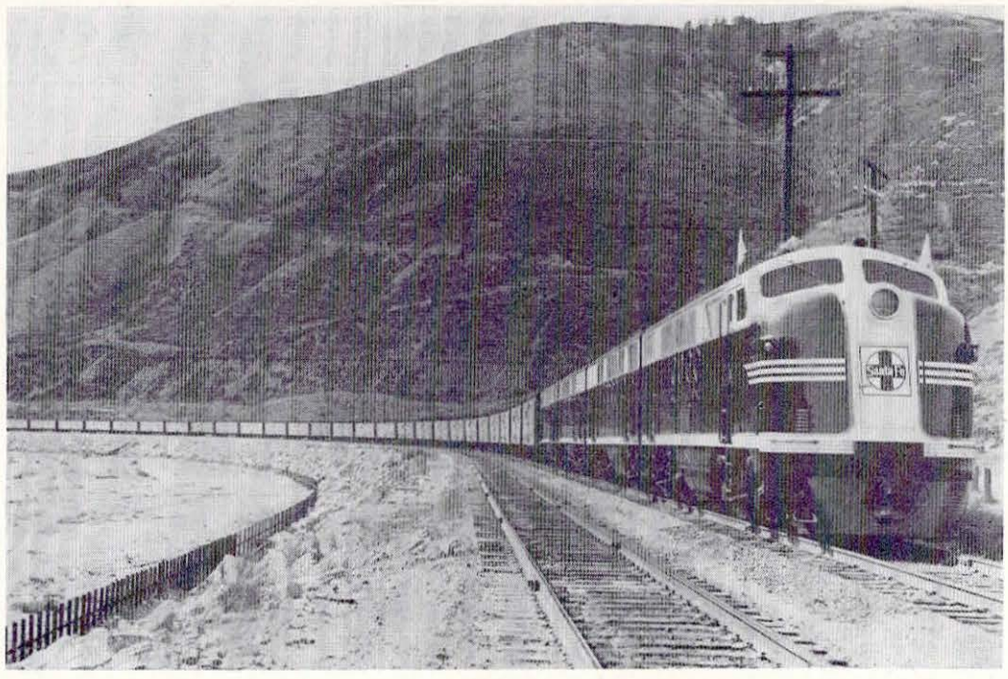
As a background for his theme, Mr. Gurley reviewed briefly the growth of the country's railroads, pointing out how the expansion of this network followed closely behind the westward march of colonization. Noting that "the nation and the railroads grew together," he declared that this nation "could not have attained its present position of preeminence had it not been for a constantly expanding railway system that helped open new frontiers and developed our commerce. Neither could our railway plant have become the greatest in the world had our economic system not offered incentives to efficiency and high productivity."

Accomplishments of the railroads may seem "prosaic when we consider the marvels of engineering in some other industrial fields," said Mr. Gurley, but he insisted that this does not mean that engineering marvels are lacking in the railroad industry. He believes that "anyone who contemplates the feats that were performed in crossing mountain ranges, in bridging rivers and gorges, in spanning wastelands, most of it before the days of instant communication and complete mechanization, will have deep respect for the courage of the railroads' early engineers."

Mr. Gurley traced the development of the steam locomotive and the adaptation of the diesel engine to rail motive power. His opinion is that, "if any developments in the art of railroading in the past century may be called revolutionary, the advent of the diesel deserves that description."

Turning to another field of engineering endeavor, Mr. Gurley declared it would "make a fascinating story in itself to trace the development of earth-moving machinery and track-maintenance devices down to this day of giant diesel-powered bulldozers, scrapers and draglines, of multiple tampers and mechanical ballast cleaners." These machines and methods are in contrast to those in use when the first railways were being built, when

Fred G. Gurley says . . .



"If any development in the art of railroading in the past century may be called revolutionary, the advent of the diesel deserves that description."

"we were using earth-moving methods almost as old as recorded history."

In the field of mechanical developments Mr. Gurley noted how hand brakes on cars were replaced by the air brake, and he described the principle of the dynamic brake for use on diesel locomotives. In the signaling field, he said, the greater efficiency of the centralized traffic control system enables a single railroad track virtually to do the work of double track.

Turning to a consideration of developments in cars he noted how freight cars have steadily increased in carrying capacity, in availability for service, and in durability, and that, in the field of passenger equipment, the twin developments of lightweight streamlining and air conditioning were perhaps the chief engineering and service advances.

Characteristics of Railroad Plant

"Viewed in relation to other agencies of transportation," said Mr. Gurley, "the three outstanding characteristics of this rail system are its extensive coverage of the country, its ability to handle anything movable any time for any destination, and its almost unlimited reserve capacity." Elaborating on the latter thought, he pointed to the facility with which the railroads handled the large increases in freight and passenger traffic that occurred between 1940 and 1944 as a result of national defense activities.

No other form of transport, "nor all of them together, could take the place of the railroad as a true common carrier of the nation's commerce."

Mr. Gurley then explained the connection between engineering advances in railroading and improvements in railroad performance. "When comparative transportation service is expressed in terms of net ton-miles per freight train-hour—a revealing measure of performance —we find an increase from 7,500 in 1921 to nearly 22,000 in 1951," he said.

The speaker pointed out two ways this improved efficiency of the railroads has inured to the benefit of the public. First, he said, it has brought better rail service at lower cost. Second, improved efficiency and higher productivity have enabled the railroads to survive against the subsidized competition they have been forced to meet in the past quarter century. While the railroads' share of the nation's traffic has declined relatively, said Mr. Gurley, the absolute volume has continued to grow with the expanding national economy. He declared that there is still a vital need for the sort of mass transportation service which the railroads can give, and that the problems facing the industry lie "at the doorstep of governmental subsidy, which we think has extended far beyond the limits of fairness and economic justification."

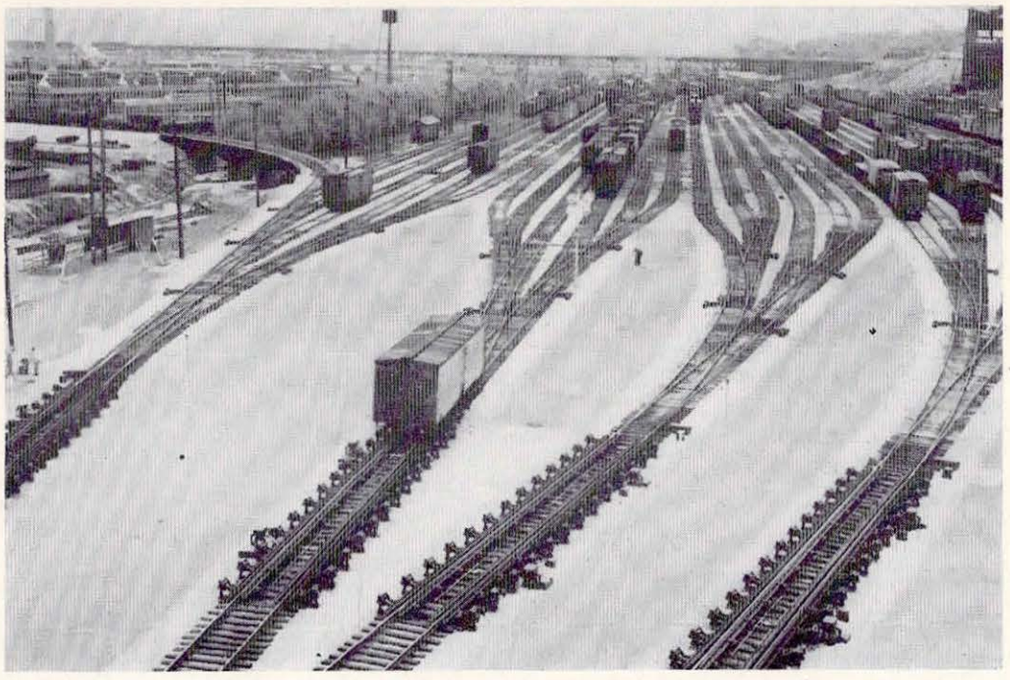
Turning his attention to possible future trends in railroad engineering, Mr. Gurley declared that "no matter how great or how small the engineering problems of tomorrow may be, we shall attain the highest level of productivity only if we have the spur of a free competitive market to drive us on. The vital spark of imagination, the indispensable will to achieve, have not survived elsewhere and would not here survive the deadening influence of state ownership, nor can they yield their best results under the stifling influence of unfair and burdensome regulation."

Clarke Speaks at Banquet

Speaking at the A.R.E.A. banquet on Monday evening, Mr. Clarke prefaced his remarks with a brief review of the contributions the railroads have made to the welfare of the country. Without the transportation provided by the railroads, he said, "we would almost certainly have had several small and relatively weak countries competing and possibly fighting with each other instead of one great and powerful nation."

Mr. Clarke divided railroad history into two major periods. The first 75 years was a period of location and construction. In those years, he said, most of the present railroad mileage was built; the pattern was fairly well set. In the past 50 years there has been expansion of lines but, in general, this has been the period of improvement and refinement, and that applies to both fixed property and the rolling stock. In the earlier years,

H. R. Clarke says . . .



"The hump-retarder yard has been made possible by the civil, signal, electrical and communication engineers working together."

he continued, the railroad engineering profession was limited almost entirely to two branches, the civil and the mechanical engineers. "The other branches had not come into the picture, at least in any large way." In this earlier period, the civil engineer, according to Mr. Clarke, "was the most important man in the railroad organization," next only to the men who provided the money.

After describing the contributions of the mechanical engineer, whom he characterized as being "next important after the civil engineer," Mr. Clarke referred to the "race" that has occurred between the engineering and mechanical departments. "Every new engine that came out of the shop was larger, heavier and more powerful than the one before and the same applied to cars and the loads they were capable of carrying. The construction and maintenance engineer then strengthened the fixed property, both bridges and tracks, to meet the new demand, but before he caught up, larger and heavier equipment was ready and in use."

The second period of railroad history Mr. Clarke subdivided into two periods of 30 and 20 years each. During the first, he said, the railroad industry was still expanding and the track structure was being gradually strengthened. The practice of treating ties came into use at the beginning of this period, and this practice, along with other advances, has resulted in the number of ties used per year being reduced from an average of 300 to 100 or less per mile of track.

Mr. Clarke then reviewed the increase that has occurred in the weight of rail. The detector car, which locates transverse fissures and other interior and hidden defects in rails, and the perfecting of the controlled cooling process, "which has practically eliminated interior transverse fissures," were mentioned as two important developments in connection with rail.

Mr. Clarke went on to outline the improvements in rolling stock much as Mr. Gurley had done earlier in the day to a different audience. He also pointed out how these advances called for corollary improvements in the fixed properties, such as better and larger facilities for servicing locomotives. The hump yard, and later the hump-retarder yard, was designed and built to permit handling longer trains and increased business to expedite the movement of cars from terminals. The hump-retarder yard, he added, has been made possible by the civil, signal, electrical and communication engineers working together. "Development of improved equipment is so rapid that a retarder yard is almost obsolete before it is finished."

Dramatic Changes

Coming to the latest period of railroad development, the past 20 years, Mr. Clarke said that "sudden and dramatic change" began as a result of the depression. The visible evidence of the change was the diesel-electric locomotive which set into action a whole new chain of subsidiary developments and improvements, such as better braking equipment, improved lighting, roller bearings, tightlock couplers, and air-conditioning of passenger equipment.

In the design and building of new equipment, the mechanical engineers, said Mr. Clarke, have perhaps appeared the most prominent, but the civil and signal engineers also had to do their part. He went on to relate the improvements that had to be made in the track structure and its alinement, to accommodate higher speeds. In the field of communications, he referred to the expanding use of radio in train service and yard operation. The electrical engineer, he said, was probably generally responsible for this development, "but the signal engineer and the engineer in charge of communications were so involved in many cases that placing the responsibility or awarding credit was at times difficult."

These spectacular changes and engineering developments did much to change the fortunes of the railroads, according to Mr. Clarke. "But the way ahead is somewhat uncertain, the margin of safety is small, and it will require the continued wholehearted, united effort not only of the engineer, but of everyone, who wishes railroad management to remain in private hands, to achieve that much-to-be-desired end."

Freight Operating Statistics of Large Railways — Selected Items

Region	Region, Road and Year		Miles of road operated	Locomotive Miles: Train-miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (*thousands*)	Car Miles: Per cent loaded	Ton-Miles (*thousands*): Gross excl.locos. & tenders	Ton-Miles (*thousands*): Net rev. and non-rev.	Road-locos. on lines: Serviceable: Unstored	Road-locos. on lines: Serviceable: Stored	Road-locos. on lines: B.O.	Road-locos. on lines: Per Cent B.O.
New Eng. Region	Boston & Maine	1952	1,690	249,494	254,415	10,031	8,643	69.2	545,094	229,309	86	12	10	9.3
		1951	1,691	267,042	274,212	12,600	10,512	71.3	651,826	280,200	86	6	8	8.0
	N. Y., N. H. & Htfd.	1952	1,765	276,788	276,985	21,193	10,569	68.4	661,471	281,849	100	..	2	2.0
		1951	1,766	307,406	307,676	20,455	11,774	68.5	753,268	330,854	97	..	8	7.6
Great Lakes Region	Delaware & Hudson	1952	793	205,955	229,357	12,498	8,494	66.3	588,227	289,006	83	32	12	9.4
		1951	793	246,021	285,009	22,153	10,852	74.6	743,796	407,699	124	18	23	13.9
	Del., Lack. & Western	1952	962	252,967	268,506	24,375	11,080	67.1	738,809	324,998	72	5	3	3.8
		1951	964	275,289	296,534	30,509	12,602	70.8	830,262	388,178	81	9	7	7.2
	Erie	1952	2,242	527,579	532,717	30,916	28,544	66.6	1,784,367	701,293	156	17	2	1.1
		1951	2,245	616,346	626,847	32,207	33,784	68.0	2,139,439	884,315	177	34	22	9.4
	Grand Trunk Western	1952	952	240,591	244,765	1,977	7,680	60.3	534,166	216,610	53	2	14	20.3
		1951	952	253,266	256,981	2,778	8,668	65.8	575,188	245,465	50	..	15	23.1
	Lehigh Valley	1952	1,207	218,550	222,487	10,699	9,985	66.6	679,320	313,312	33	3	..	..
		1951	1,211	243,862	254,742	18,903	12,330	70.7	833,328	406,430	37	5	5	10.6
	New York Central	1952	10,653	2,445,420	2,515,994	104,358	90,058	61.0	6,355,103	2,750,769	743	150	254	22.1
		1951	10,675	2,952,342	3,135,851	175,069	111,364	63.9	7,907,446	3,661,493	979	81	364	25.6
	New York, Chic. & St. L.	1952	2,160	678,013	704,084	7,853	25,940	64.1	1,822,577	758,751	179	27	44	17.6
		1951	2,161	777,095	798,578	12,983	31,360	67.6	2,175,461	997,006	211	10	30	12.0
	Pitts. & Lake Erie	1952	221	35,737	36,016	113	1,592	58.1	138,778	78,943	19	13	20	38.5
		1951	221	98,279	100,752	34	4,282	72.4	353,471	223,195	30	..	11	26.8
	Wabash	1952	2,381	493,248	497,284	7,538	20,669	67.4	1,312,132	524,123	99	30	40	23.7
		1951	2,381	525,579	530,791	8,525	22,258	70.6	1,404,170	592,054	123	13	78	36.4
Central Eastern Region	Baltimore & Ohio	1952	6,082	1,381,125	1,528,934	139,603	53,806	60.0	4,103,542	1,933,915	491	93	178	23.4
		1951	6,083	1,723,495	2,003,352	216,935	69,975	65.4	5,295,320	2,707,993	632	119	172	18.6
	Central of New Jersey	1952	411	67,943	68,175	3,371	2,660	67.4	195,022	103,041	31	..	1	3.1
		1951	410	72,512	72,666	3,527	2,892	66.4	216,454	112,874	39	..	2	4.9
	Central of Pennsylvania	1952	207	63,187	67,988	8,234	2,398	65.6	185,574	98,811	34	4	6	13.6
		1951	210	70,945	78,127	12,240	2,804	70.5	201,362	109,470	26	2	6	17.6
	Chicago & Eastern Ill.	1952	868	112,458	112,458	2,413	4,106	66.4	271,407	126,462	26	..	2	7.1
		1951	886	127,236	127,236	3,519	4,944	70.5	319,059	156,096	28	..	1	3.4
	Elgin, Joliet & Eastern	1952	236	55,333	55,566	28	1,761	66.1	131,647	69,262	34	8	..	..
		1951	238	98,588	99,606	272	3,420	60.1	311,758	168,109	43	..	..	..
	Pennsylvania System	1952	9,961	2,613,416	2,795,719	276,245	108,227	61.4	7,778,463	3,523,924	1,051	116	347	22.9
		1951	10,045	3,336,161	3,616,534	380,063	144,492	67.0	10,219,065	5,104,364	1,234	107	280	17.3
	Reading	1952	1,320	309,913	314,702	19,662	11,611	61.9	927,379	484,060	177	21	31	13.5
		1951	1,311	369,593	382,616	30,945	14,554	68.8	1,118,724	623,820	181	14	24	11.0
	Western Maryland	1952	836	130,654	141,442	12,978	3,961	60.9	320,205	169,237	98	33	15	10.3
		1951	837	182,989	216,551	25,589	6,734	66.5	537,786	304,731	128	5	18	11.9
Pocahontas Region	Chesapeake & Ohio	1952	5,036	1,236,834	1,281,539	44,500	56,961	56.5	4,922,291	2,717,798	410	91	203	28.8
		1951	5,042	1,448,269	1,517,055	64,023	67,879	58.8	5,812,718	3,293,549	474	11	265	35.3
	Norfolk & Western	1952	2,113	621,655	656,273	46,273	28,193	58.0	2,510,597	1,343,352	221	46	15	5.3
		1951	2,113	747,752	796,276	60,523	36,058	59.7	3,171,460	1,745,912	251	17	14	5.0
Southern Region	Atlantic Coast Line	1952	5,461	844,709	844,855	10,955	25,882	60.0	1,804,005	787,710	281	22	13	4.1
		1951	5,434	893,976	895,631	13,047	27,791	63.2	1,889,292	846,647	371	24	123	23.7
	Central of Georgia	1952	1,754	213,342	217,732	3,224	7,159	69.0	461,520	212,967	85	6	5	5.2
		1951	1,765	261,747	263,376	4,225	7,554	69.9	489,853	228,507	107	5	13	10.4
	Gulf, Mobile & Ohio	1952	2,718	296,440	296,440	181	14,321	69.4	943,581	436,240	83	..	3	3.5
		1951	2,851	322,078	322,078	205	16,033	70.0	1,058,296	496,396	81	..	2	2.4
	Illinois Central	1952	6,539	1,398,623	1,402,400	47,485	48,679	61.7	3,516,437	1,585,254	519	57	80	12.2
		1951	6,539	1,487,333	1,492,538	51,697	51,972	62.9	3,755,498	1,731,778	561	41	62	9.3
	Louisville & Nashville	1952	4,756	913,531	954,533	22,188	30,598	63.0	2,222,872	1,089,942	235	70	54	15.0
		1951	4,769	1,075,297	1,146,186	31,693	35,845	65.0	2,614,810	1,331,628	320	27	87	20.0
	Nash., Chatt. & St. Louis	1952	1,032	190,779	194,143	3,090	6,003	70.3	391,512	183,426	48	8	6	9.7
		1951	1,049	198,765	201,122	4,184	6,144	75.4	384,983	185,558	56	..	5	8.2
	Seaboard Air Line	1952	4,135	684,852	687,834	4,060	24,651	63.1	1,710,418	725,648	171	76	7	2.8
		1951	4,136	758,940	765,096	5,903	26,147	65.5	1,791,216	799,290	202	72	55	16.7
	Southern	1952	6,264	1,021,543	1,021,610	12,047	35,899	68.9	2,304,679	1,048,144	308	71	62	14.1
		1951	6,302	1,166,299	1,173,020	12,518	39,779	70.5	2,523,435	1,162,914	374	31	184	31.2
Northwestern Region	Chicago & North Western	1952	7,872	749,263	759,974	17,882	27,732	66.0	1,927,700	859,692	266	23	126	30.4
		1951	7,910	880,288	894,097	24,019	33,319	67.9	2,345,926	1,049,550	314	19	136	29.0
	Chicago Great Western	1952	1,441	135,955	135,955	2,190	7,255	67.4	489,029	220,199	33	..	1	2.9
		1951	1,441	140,864	140,864	7,355	7,944	68.5	535,980	245,385	31	..	1	3.1
	Chic., Milw., St. P. & Pac.	1952	10,663	1,106,084	1,135,967	37,089	41,965	62.3	2,953,500	1,301,171	401	72	57	10.8
		1951	10,664	1,149,578	1,186,770	44,268	45,069	67.7	3,056,399	1,428,513	413	82	69	12.2
	Chic., St. P., Minn. & Omaha	1952	1,606	171,879	175,099	7,112	4,948	68.8	336,494	149,863	61	..	33	35.1
		1951	1,606	189,242	194,132	7,953	5,609	68.3	382,238	169,955	69	1	29	29.3
	Duluth, Missabe & Iron Range	1952	569	38,473	38,619	617	991	48.7	98,910	54,665	20	55	7	8.5
		1951	566	216,790	218,238	2,115	9,427	50.8	1,044,602	618,627	65	..	8	11.0
	Great Northern	1952	8,181	971,506	973,286	32,592	38,504	67.2	2,744,218	1,316,995	300	133	64	12.9
		1951	8,220	1,024,233	1,025,905	39,596	43,416	66.5	3,275,985	1,709,813	357	81	49	10.1
	Minneap., St. P. & S. S. M.	1952	4,172	373,156	376,948	3,215	12,344	65.2	835,278	391,598	105	..	12	10.3
		1951	4,179	415,109	423,562	5,616	15,098	65.2	1,067,956	526,064	113	..	18	13.7
	Northern Pacific	1952	6,585	765,232	787,848	33,993	31,047	67.9	2,220,787	982,949	333	19	59	14.4
		1951	6,591	760,502	787,571	37,927	31,781	72.1	2,185,909	1,090,383	325	26	63	15.2
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1952	13,072	2,671,723	2,787,007	139,943	113,045	65.0	7,714,025	2,935,449	640	21	119	15.3
		1951	13,097	2,669,390	2,824,474	111,882	111,881	65.8	7,582,502	2,901,807	682	38	138	16.1
	Chic., Burl. & Quincy	1952	8,773	1,050,178	1,056,997	32,058	41,767	64.5	2,863,642	1,275,441	322	54	93	19.8
		1951	8,788	1,131,023	1,137,114	38,106	46,668	67.3	3,184,670	1,484,866	326	56	119	23.8
	Chic., Rock I. & Pac.	1952	7,902	1,080,737	1,092,271	14,919	36,364	57.8	2,745,074	1,111,650	235	5	36	13.0
		1951	7,903	1,043,011	1,056,336	16,768	36,257	64.0	2,470,739	1,079,846	268	14	41	12.7
	Denver & R. G. Wn.	1952	2,333	276,566	301,976	34,886	13,255	74.2	852,018	408,665	91	41	25	15.9
		1951	2,334	303,860	329,375	33,755	14,232	72.3	978,269	476,934	93	41	31	18.8
	Southern Pacific	1952	8,048	2,355,947	2,489,529	301,026	100,257	62.6	7,025,605	2,725,624	676	6	132	16.2
		1951	8,052	2,302,336	2,432,805	310,247	101,519	66.0	6,833,944	2,708,224	732	5	137	15.7
	Union Pacific	1952	9,843	2,173,204	2,247,988	144,036	93,689	67.4	6,259,921	2,697,474	537	98	156	19.7
		1951	9,712	2,158,709	2,248,162	155,763	95,302	68.9	6,407,786	2,885,706	559	62	151	19.6
	Western Pacific	1952	1,190	209,398	212,171	14,407	9,965	73.8	607,554	271,165	35	8	3	6.5
		1951	1,190	219,106	223,814	15,688	11,123	76.6	692,199	327,935	49	12	30	33.0
Southwestern Region	International-Gt. Northern*	1952	1,104	163,812	163,812	36	5,372	64.4	406,553	180,930	49	2	10	16.4
		1951	1,104	193,628	193,773	672	6,333	64.7	464,046	215,283	46	..	12	20.7
	Kansas City Southern	1952	886	148,244	148,249	159	7,771	65.8	537,776	242,891	26	6	6	15.8
		1951	886	161,607	161,615	524	8,815	69.3	587,492	275,660	29	13	23	35.4
	Mo.-Kans.-Texas Lines	1952	3,230	387,607	388,975	5,859	13,515	61.6	936,499	408,193	88	7	5	5.0
		1951	3,230	368,971	371,760	5,867	13,685	65.5	883,427	380,582	78	9	32	26.9
	Missouri Pacific*	1952	6,933	1,184,418	1,189,892	15,225	43,128	64.1	2,985,998	1,311,139	315	16	50	13.1
		1951	6,942	1,256,115	1,278,056	16,804	47,602	67.6	3,192,719	1,443,541	338	26	64	15.0
	Texas & Pacific	1952	1,832	352,672	352,672	3,516	14,211	61.3	1,013,421	366,445	63	11	23	23.7
		1951	1,844	369,640	369,640	5,721	14,737	63.2	1,020,745	377,228	98	2	..	..
	St. Louis-San Francisco	1952	4,567	636,402	636,540	6,110	22,369	62.7	1,579,138	702,365	189	15	20	8.9
		1951	4,570	642,797	646,066	6,974	22,800	64.0	1,566,053	696,220	208	72	95	25.3
	St. Louis Southw. Lines	1952	1,562	327,070	327,427	4,419	13,865	72.7	834,336	372,960	55	34	11	11.0
		1951	1,562	380,735	382,095	5,223	15,987	73.0	968,056	432,734	79	9	15	14.6
	Texas & New Orleans	1952	4,280	716,944	717,444	14,866	26,074	65.1	1,791,025	772,153	225	..	23	9.3
		1951	4,291	750,808	751,040	13,629	26,310	69.3	1,744,491	772,505	224	..	46	17.0

For the Month of June 1952 Compared with June 1951

Region	Road	Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos and tenders	G.t.m.per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Mile per loco. per day
New Eng. Region	Boston & Maine	1952	1,681	7,198	8,879	3.1	36,318	2,187	920	26.5	859	46.7	4,523	16.6	91.4
		1951	1,239	9,001	10,240	1.9	38,110	2,445	1,051	26.7	884	46.5	5,523	15.6	103.3
	N. Y., N. H. & Htfd.	1952	2,033	12,614	14,647	4.6	36,343	2,393	1,020	26.7	643	35.2	5,323	15.2	110.1
		1951	1,429	16,602	18,031	2.9	36,745	2,452	1,077	28.1	593	30.8	6,245	15.0	118.6
Great Lakes Region	Delaware & Hudson	1952	5,638	4,126	9,764	6.5	55,693	2,870	1,410	34.0	992	44.0	12,148	19.5	68.1
		1951	2,124	6,593	8,717	7.0	56,843	3,038	1,665	37.6	1,579	56.4	17,137	18.8	65.2
	Del., Lack. & Western	1953	6,103	8,760	14,863	5.3	46,574	2,969	1,306	29.3	678	34.5	11,261	15.9	135.6
		1951	4,626	11,601	16,227	7.0	46,087	3,073	1,437	30.8	810	37.1	13,422	13.5	120.3
	Erie	1952	9,916	15,401	25,317	4.0	60,575	3,414	1,342	24.6	911	55.6	10,427	17.9	116.3
		1951	6,394	23,734	30,128	3.2	59,641	3,506	1,450	26.2	1,010	56.7	13,130	17.2	104.4
	Grand Trunk Western	1952	3,880	8,852	12,732	5.5	46,104	2,236	907	28.2	580	34.1	7,584	20.8	124.1
		1951	3,693	9,659	13,352	5.3	45,854	2,286	976	28.3	616	33.1	8,595	20.2	141.2
	Lehigh Valley	1952	3,076	10,222	13,298	6.9	62,380	3,164	1,459	31.4	745	35.7	8,653	20.1	228.0
		1951	2,572	13,152	15,724	6.2	66,597	3,481	1,698	33.0	873	37.5	11,187	19.5	195.6
	New York Central	1952	73,141	78,288	151,429	9.8	45,689	2,639	1,142	30.5	611	32.8	8,607	17.6	83.2
		1951	50,494	121,612	172,106	5.0	45,612	2,720	1,259	32.9	689	32.8	11,433	17.0	86.1
	New York, Chic. & St. L.	1952	7,288	13,983	21,271	7.9	50,964	2,729	1,136	29.3	1,090	58.1	11,709	19.0	103.6
		1951	5,668	21,632	27,300	3.2	50,084	2,858	1,310	31.8	1,250	58.2	15,379	17.9	115.9
	Pitts. & Lake Erie	1952	3,418	7,430	10,848	8.1	61,515	3,883	2,209	49.6	217	7.5	11,907	15.8	26.7
		1951	3,729	13,606	17,335	8.5	52,852	3,609	2,279	52.1	444	11.8	33,664	14.7	85.8
	Wabash	1952	8,905	13,484	22,389	5.8	59,257	2,678	1,070	25.4	839	49.1	7,338	22.3	105.5
		1951	6,785	13,678	20,463	4.1	57,444	2,698	1,137	26.6	1,002	53.4	8,289	21.5	89.7
Central Eastern Region	Baltimore & Ohio	1952	56,740	38,943	95,683	7.5	44,197	3,001	1,414	35.9	669	31.1	10,599	14.9	75.8
		1951	44,556	63,434	107,990	5.3	42,290	3,110	1,591	38.7	852	33.6	14,839	13.8	83.8
	Central of New Jersey	1952	527	9,296	9,823	3.1	36,466	3,004	1,587	38.7	361	13.8	8,357	12.7	113.5
		1951	356	8,983	9,339	2.9	38,412	3,098	1,615	39.0	399	15.4	9,177	12.9	93.8
	Central of Pennsylvania	1952	2,438	2,662	5,100	20.2	40,325	3,124	1,663	41.2	649	24.0	15,912	13.7	70.1
		1951	1,581	3,802	5,383	16.8	43,727	3,050	1,658	39.0	742	27.0	17,376	15.4	101.9
	Chicago & Eastern Ill.	1952	3,154	3,201	6,355	7.8	40,587	2,416	1,126	30.8	724	35.4	4,856	16.8	149.7
		1951	1,496	3,096	4,592	10.9	43,204	2,513	1,229	31.6	1,131	50.8	5,873	17.2	167.7
	Elgin, Joliet & Eastern	1952	7,301	10,894	18,195	3.3	21,828	2,475	1,302	39.3	128	4.9	9,783	9.2	59.3
		1951	5,888	14,600	20,488	2.0	21,865	3,255	1,755	49.2	274	9.3	23,545	6.9	109.8
	Pennsylvania System	1952	93,086	116,110	209,196	9.8	50,518	3,061	1,387	32.6	555	27.8	11,792	17.0	73.7
		1951	95,420	119,003	214,423	8.9	46,844	3,168	1,582	35.3	800	33.8	16,938	15.3	90.1
	Reading	1952	16,490	15,544	32,034	4.7	39,598	2,998	1,565	41.7	519	20.1	12,224	13.2	61.3
		1951	10,015	22,507	32,522	3.9	38,183	3,029	1,689	42.9	663	22.5	15,861	12.6	73.7
	Western Maryland	1952	6,558	2,351	8,909	2.5	37,627	2,479	1,310	42.7	642	24.7	6,748	15.4	38.7
		1951	3,889	3,461	7,350	2.7	43,147	2,984	1,691	45.3	1,289	42.8	12,136	14.7	58.2
Pocahontas Region	Chesapeake & Ohio	1952	49,763	25,308	75,071	4.3	71,274	4,012	2,215	47.7	1,204	44.6	17,989	17.9	68.2
		1951	50,019	26,517	76,536	4.2	67,536	4,054	2,297	48.5	1,415	49.6	21,774	16.8	75.6
	Norfolk & Western	1952	35,135	5,951	41,086	3.0	69,453	4,108	2,198	47.6	1,077	39.0	21,192	17.2	91.0
		1951	27,912	8,316	36,228	2.3	71,396	4,316	2,376	48.4	1,551	53.6	27,542	16.8	108.5
Southern Region	Atlantic Coast Line	1952	15,152	17,440	32,601	3.6	35,870	2,150	939	30.4	775	42.5	4,808	16.8	96.5
		1951	10,475	18,917	29,392	2.4	33,950	2,123	951	30.5	944	49.0	5,194	16.1	66.3
	Central of Georgia	1952	2,903	5,343	8,246	4.9	38,470	2,175	1,004	29.7	857	41.8	4,047	17.8	82.7
		1951	1,909	5,902	7,811	3.0	33,474	1,879	877	30.2	1,029	48.7	4,316	17.9	74.7
	Gulf, Mobile & Ohio	1952	4,387	9,397	14,234	2.8	62,180	3,191	1,475	30.5	1,050	49.7	5,350	19.5	123.9
		1951	3,141	10,774	13,915	3.7	63,834	3,295	1,545	31.0	1,219	56.3	5,804	19.4	138.3
	Illinois Central	1952	28,735	24,793	53,528	2.8	43,814	2,548	1,149	32.6	977	48.6	8,081	17.4	79.0
		1951	22,124	32,142	54,266	1.9	46,497	2,558	1,180	33.3	1,081	51.6	8,828	18.4	82.9
	Louisville & Nashville	1952	33,399	12,552	45,951	6.1	40,812	2,437	1,195	45.6	761	33.9	7,639	16.8	94.6
		1951	26,280	15,391	41,671	10.8	38,901	2,439	1,242	37.1	988	40.9	9,308	16.0	97.7
	Nash., Chatt. & St. Louis	1952	1,978	4,105	6,083	4.9	40,069	2,059	965	30.6	985	45.8	5,924	19.5	114.3
		1951	1,010	4,561	5,571	3.5	38,525	1,944	937	30.2	1,099	48.3	5,896	19.9	107.3
	Seaboard Air Line	1952	10,593	12,801	23,394	2.0	46,650	2,549	1,082	29.4	969	52.1	5,850	18.7	103.6
		1951	8,806	13,893	22,699	2.0	43,444	2,407	1,074	30.6	1,108	55.3	6,442	18.4	88.8
	Southern	1952	14,685	27,237	41,922	3.3	39,265	2,267	1,031	29.2	831	41.3	5,578	17.4	84.9
		1951	12,373	27,895	40,268	4.3	37,281	2,174	1,002	29.2	959	46.5	6,151	17.2	72.8
Northwestern Region	Chicago & North Western	1952	25,314	29,283	54,597	3.6	42,265	2,675	1,193	31.0	524	25.6	3,640	16.4	68.6
		1951	17,192	30,678	47,870	4.2	42,490	2,795	1,250	31.5	739	34.6	4,423	15.9	71.4
	Chicago Great Western	1952	1,891	5,027	6,918	2.7	62,809	3,613	1,627	30.3	1,053	51.4	5,094	17.5	141.3
		1951	1,359	5,956	7,315	2.5	64,599	3,821	1,750	30.9	1,166	55.2	5,676	17.0	161.6
	Chic., Milw., St. P. & Pac.	1952	37,204	27,901	65,105	3.9	46,389	2,687	1,184	31.0	664	34.4	4,068	17.4	80.8
		1951	30,070	33,258	63,328	4.4	44,886	2,675	1,250	31.7	736	34.3	4,465	16.9	78.2
	Chic., St. P., Minn. & Omaha	1952	986	7,266	8,252	3.8	30,596	2,035	906	30.3	606	29.1	3,110	15.6	72.2
		1951	1,074	8,335	9,409	2.8	29,270	2,102	935	30.3	618	29.9	3,528	14.5	75.7
	Duluth, Missabe & Iron Range	1952	15,457	782	16,239	1.3	42,161	2,693	1,488	55.2	111	41.4	3,202	16.4	19.1
		1951	13,330	2,221	15,551	2.3	88,533	5,002	2,962	65.6	1,346	40.4	36,433	18.4	121.2
	Great Northern	1952	26,701	18,634	45,335	4.1	48,811	2,842	1,364	34.2	992	43.2	5,366	17.3	73.6
		1951	24,524	17,905	42,429	3.3	48,881	3,242	1,692	39.4	1,295	49.4	6,934	15.3	80.5
	Minneap., St. P. & S. S. M.	1952	8,134	7,536	15,670	7.2	42,969	2,244	1,052	31.7	833	40.2	3,129	19.2	115.9
		1951	6,675	9,409	16,084	5.6	44,838	2,595	1,278	34.8	1,115	49.0	4,196	17.4	120.5
	Northern Pacific	1952	22,618	12,802	35,420	5.8	51,669	2,921	1,293	31.7	929	43.2	4,976	17.8	72.3
		1951	19,168	16,401	35,569	5.3	48,360	2,888	1,441	34.3	1,000	40.4	5,515	16.8	73.0
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1952	57,329	36,456	93,785	3.5	58,751	2,911	1,108	26.0	1,042	61.8	7,485	20.3	132.5
		1951	51,420	37,672	89,092	4.1	58,434	2,858	1,094	25.9	1,097	64.2	7,385	20.6	120.0
	Chic., Burl. & Quincy	1952	21,803	24,868	46,671	3.6	53,975	2,734	1,218	30.5	929	47.2	4,846	19.8	80.2
		1951	16,928	25,133	42,061	3.8	54,344	2,827	1,318	31.8	1,191	55.6	5,632	19.3	81.3
	Chic., Rock I. & Pac.	1952	13,053	25,650	38,703	2.8	45,023	2,560	1,037	30.6	969	54.9	4,689	17.7	140.5
		1951	9,726	25,994	35,720	3.6	44,115	2,374	1,038	29.8	1,018	53.4	4,555	18.6	117.2
	Denver & R. G. Wn.	1952	7,688	4,911	12,599	3.4	57,410	3,091	1,483	30.8	1,078	47.1	5,839	18.6	76.7
		1951	7,926	4,843	12,769	4.1	56,495	3,228	1,574	33.5	1,246	51.4	6,811	17.5	78.1
	Southern Pacific	1952	29,264	48,481	77,745	2.9	51,739	3,020	1,171	27.2	1,153	67.8	11,289	17.3	120.2
		1951	24,856	49,827	74,683	3.1	48,753	3,008	1,192	26.7	1,154	65.6	11,211	16.4	112.4
	Union Pacific	1952	34,691	29,036	63,727	2.8	67,794	2,911	1,254	28.8	1,418	73.1	9,135	23.5	104.7
		1951	34,727	32,896	67,623	2.9	66,626	3,004	1,353	30.3	1,433	68.6	9,904	22.4	105.8
	Western Pacific	1952	2,456	2,613	5,069	9.8	68,005	2,919	1,303	27.2	1,657	82.5	7,596	23.4	160.6
		1951	1,727	4,730	6,457	6.0	67,790	3,168	1,501	29.5	1,759	77.9	9,186	21.5	89.5
Southwestern Region	International-Gt. Northern*	1952	963	7,386	8,349	2.3	49,731	2,501	1,113	33.7	702	32.4	5,463	20.0	93.6
		1951	716	7,001	7,717	2.6	45,804	2,413	1,119	34.0	918	41.7	6,500	19.1	108.1
	Kansas City Southern	1952	1,188	5,985	7,173	4.9	71,742	3,646	1,647	31.3	1,150	55.9	9,138	19.8	141.5
		1951	1,050	5,660	6,710	3.6	70,919	3,646	1,711	31.3	1,345	62.9	10,371	19.5	90.8
	Mo.-Kans.-Texas Lines	1952	4,568	7,924	12,492	6.5	46,325	2,423	1,056	30.2	1,124	60.4	4,213	19.2	135.6
		1951	4,311	5,809	10,120	6.0	46,226	2,401	1,034	27.8	1,281	70.3	3,928	19.3	109.0
	Missouri Pacific*	1952	23,526	16,811	40,337	3.5	51,617	2,540	1,115	30.4	1,113	57.2	6,304	20.5	114.1
		1951	19,352	18,670	38,022	2.1	52,515	2,558	1,157	30.3	1,298	63.3	6,931	20.7	108.0
	Texas & Pacific	1952	2,735	7,277	10,012	5.5	65,944	2,877	1,040	25.8	1,254	79.3	6,667	22.9	127.2
		1951	2,066	8,993	11,059	4.5	60,715	2,767	1,023	25.6	1,172	72.4	6,819	22.0	132.3
	St. Louis-San Francisco	1952	13,483	13,451	26,934	2.6	42,925	2,490	1,107	31.4	898	45.6	5,126	17.3	106.6
		1951	11,317	11,366	22,683	3.2	41,591	2,442	1,086	30.5	1,005	51.4	5,078	17.1	65.2
	St. Louis Southw. Lines	1952	2,091	4,841	6,932	2.6	51,633	2,553	1,141	26.9	1,735	88.6	7,959	20.2	117.3
		1951	1,563	5,840	7,403	1.7	49,471	2,547	1,138	27.1	2,024	102.5	9,235	19.5	136.1
	Texas & New Orleans	1952	5,429	15,953	21,382	3.0	48,898	2,516	1,085	29.6	1,155	59.9	6,014	19.6	104.4
		1951	3,450	15,611	19,061	3.1	44,972	2,342	1,037	29.4	1,324	65.1	6,001	19.4	98.8

*Report of trustee or trustees.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

RAILWAY OFFICERS

(Continued from page 18)
ton, W. Va., **C. C. Madison** has been appointed assistant superintendent at Peach Creek, W. Va., and **F. G. Cobb** has been appointed assistant superintendent at Hinton, W. Va. The positions of acting assistant superintendents at Peach Creek and Hinton, formerly held by Messrs. Madison and Cobb, have been abolished. **C. H. Manning** has been appointed trainmaster of the Peninsula subdivision at Richmond, Va., and the position of acting trainmaster, formerly held by Mr. Manning, has been abolished.

When the SOUTHERN's new Ernest Norris yard at Birmingham, Ala., is placed in service, its operation will be under jurisdiction of the railroad's Birmingham division.

TRAFFIC

Franklin C. Afferton, Jr., district freight agent of the BALTIMORE & OHIO at New York, has retired after 45 years of railroad service.

A. Gorman, trainmaster of the ILLINOIS CENTRAL at Champaign, Ill., has been appointed general agent at that point.

D. W. Swift has been appointed general agent of the MISSOURI PACIFIC at Springfield, Mo., succeeding the late **V. J. Courtwright.**

Harry D. Morrison, traveling freight agent of the GREAT NORTHERN at Portland, Ore., has been appointed general agent at San Francisco.

Herbert E. Wilson, Jr., has resumed service with the SOUTHERN SYSTEM as foreign freight agent at New York. Mr. Wilson was district freight agent at New York before being furloughed to the United States Army in September 1950.

Herbert B. Attaway, Jr., forestry agent of the ATLANTIC COAST LINE, has been appointed industrial forester, with headquarters as before at Wilmington, N. C.

Paul G. Bohlsen has been appointed assistant freight traffic manager of the CHICAGO, BURLINGTON & QUINCY, as *Railway Age* reported on July 28. Mr. Bohlsen entered railroad service as a clerk in the general freight office at Omaha in 1923, and held several stenographic and clerical positions there. In 1945 he became chief clerk to assistant general freight traffic manager at Chicago, and in 1946 was appointed assistant general freight agent. He was named assistant freight traffic manager in charge of commerce matters in 1950 and held that position until his recent appointment.

James C. McGohan, freight traffic manager in charge of rates of the BALTIMORE & OHIO system, has been appointed general freight traffic manager, with headquarters as before at Baltimore, succeeding **John W. Phipps, Jr.,** who has been promoted to vice-president in charge of traffic at Baltimore. Mr. McGohan was born in 1902 at Elizaville, Ky., and has worked for the B&O since he was 16 years old,

James C. McGohan

beginning as a yard clerk in the local freight office at Middletown, Ohio. After serving in various clerical positions, he became commerce agent at Cincinnati in 1927, assistant general freight agent there in 1932, general freight agent at Baltimore in 1937, and assistant freight traffic manager there on January 1, 1946. Mr. McGohan was appointed freight traffic manager at Baltimore on June 1, 1946.

Harry A. Wood, commissioner of development of the CANADIAN NATIONAL, has been appointed chief of development, with headquarters as before at Montreal, succeeding **Marvin W. Maxwell,** who, after more than 10 years in charge of development work for the system, has been assigned to special departmental duties.

Francis Adrian Norton, industrial agent of the CENTRAL OF GEORGIA at Atlanta, Ga., has been promoted to assistant general industrial agent. **John H. Footman,** supervisor of mail and express, has been advanced to superintendent of mail and express at Savannah, Ga.

A. C. Collins, Jr., has been appointed general agent of the CHICAGO GREAT WESTERN at Kansas City, Mo., succeeding **A. J. Howard,** who has retired.

A. F. Reuland has been appointed division freight and passenger agent of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC at Aberdeen, S.D., to succeed **H. K. Williams,** who has been transferred to Sioux City, Iowa. **R. B. Amis,** traveling freight agent, has been appointed general agent at Los Angeles, succeeding **H. W. Porter,** who has retired.

The KANSAS CITY SOUTHERN has appointed **Nels R. Howe** as general agent at Portland, Ore. and **Ted H. Presby** as general agent at Los Angeles. Mr. Presby succeeds **Ward Allen,** who has been transferred to New York. **W. C. Schmidt** has been transferred as general agent from Atlanta to Beaumont, Tex., and **F. L. Colvin** from Beaumont to Atlanta.

T. D. Boyce has been appointed general agent of the CHICAGO & EASTERN ILLINOIS at Miami.

MECHANICAL

F. Johnson, traveling engineer of the SOO LINE, has been promoted to master mechanic, at Minneapolis, succeeding **G. W. Stanton,** who has retired.

D. F. Carter, assistant electrical engineer—equipment, of the CHICAGO, BURLINGTON & QUINCY at Chicago, has been promoted to electrical engineer—equipment, succeeding **J. E. Gardner,** who has retired. **F. W. Dunning** has been appointed engineer of tests, to succeed the late **P. H. Smith.**

C. H. Goebel has been appointed supervisor of automatic train stop of the CHICAGO & NORTH WESTERN at Chicago, succeeding the late **A. E. Hilton. R. C. Gaeth** has been made acting electrical supervisor at Chicago, to succeed **H. F. Hinsey,** who has been granted a leave of absence because of illness.

R. S. Gates, assistant master mechanic of the MICHIGAN CENTRAL, has been promoted to master mechanic at Jackson, Mich., succeeding **C. R. Heming,** who has retired.

PURCHASES & STORES

The GREAT NORTHERN has announced appointment of **C. W. Driver** as district storekeeper at Havre, Mont., succeeding **W. A. Thundstedt,** who has been transferred to St. Cloud, Minn. **L. J. Mero,** division storekeeper at Grand Forks, N.D., succeeds Mr. Driver.

SPECIAL

L. H. Parker has been appointed employment supervisor of the ATCHISON, TOPEKA & SANTA FE at Albuquerque, N.M.

E. B. Herdman, manager of personnel of the DENVER & RIO GRANDE WESTERN, has been appointed director of personnel, with headquarters as before at Denver.

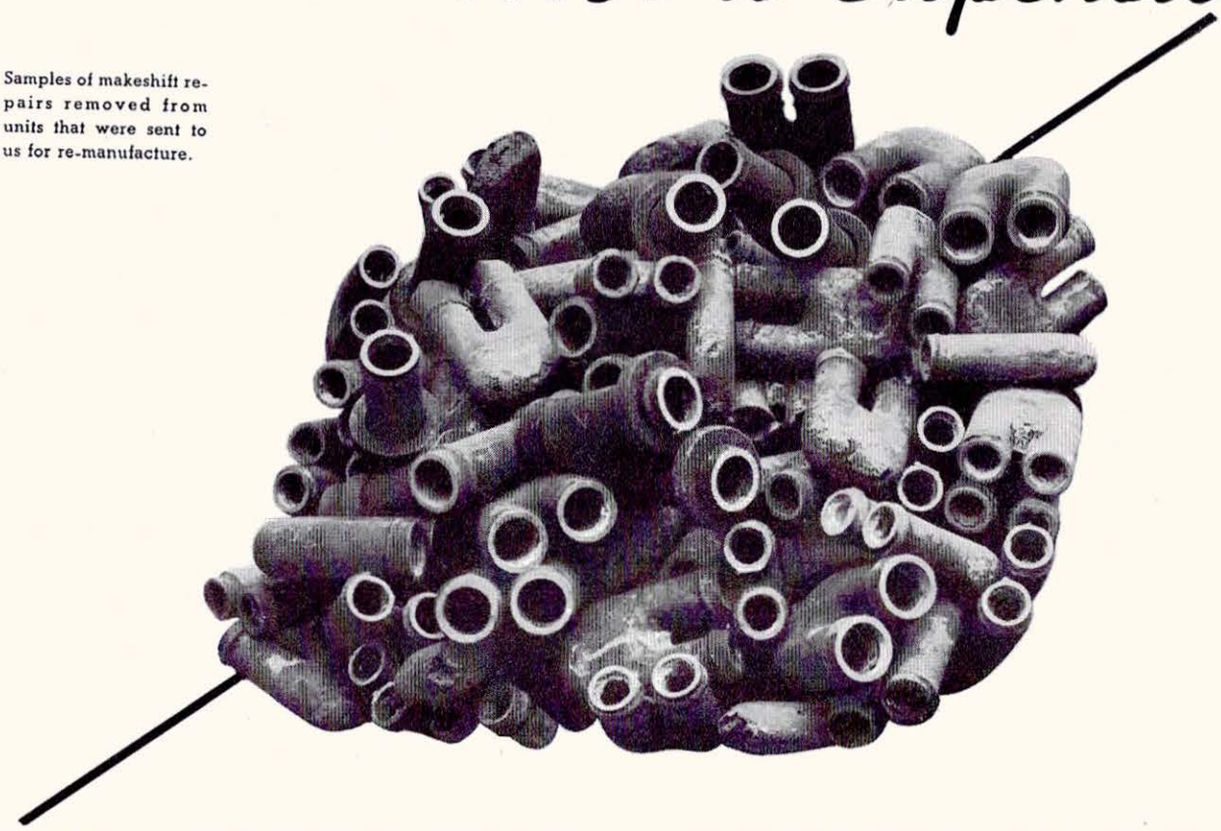
George H. Hill, publicity manager of the MAINE CENTRAL at Portland, Me., has been appointed also advertis-

Don't Restrict

Steam Passages of Superheater Units

...It is Expensive

Samples of makeshift repairs removed from units that were sent to us for re-manufacture.



Internal ridges caused by butt welding the return bends onto straight lengths of old and questionable superheater tubing...cause eddy currents of steam with a consequent increase of wall temperature and eventual early failure of the butt welded return bend. Such conditions also *increase pressure drop* with a decrease in cylinder horsepower.

This type of makeshift repairs is poor engineering practice and is one that does not pay when train schedules and failures are considered. You can only control the continuity of the wall structure at the return bend sections of the invisible steam surfaces...by machine-die-forging. These surfaces are subjected to high degrees of superheated steam and high boiler pressures which vary from the firing-up period to maximum operating conditions. They spell quick failure to makeshift repairs.

When superheater units wear out, *play safe* and have them re-manufactured at our plant. Such a set of units are returned to you like new with s-m-o-o-t-h interiors and exteriors and many more years of carefree and profitable service life. This policy PAYS.

THE
SUPERHEATER CO.
Division of
COMBUSTION ENGINEERING-SUPERHEATER, INC.
200 Madison Ave., NEW YORK 16
Bankers Building, CHICAGO 3
Montreal, Canada, THE SUPERHEATER COMPANY, Ltd.

Superheaters • Superheater Pyrometers • Exhaust Steam Injectors • Steam Dryers • Feedwater Heaters • Steam Generators • Oil Separators • American Throttles

ing manager. **George P. McCallum,** magazine editor, has been named assistant publicity manager and editor-in-chief of the railroad magazine.

R. P. Love has been appointed assistant chief personnel officer of the MISSOURI PACIFIC at Palestine, Tex., succeeding **B. W. Procter,** who has retired after 48 years of service.

OBITUARY

James A. Blalock, division engineer of the RICHMOND, FREDERICKSBURG & POTOMAC at Richmond, Va., died on August 29 following a brief illness.

Gerrit Fort, 87, who was vice-president in charge of traffic of the BOSTON & MAINE from 1920 to 1927, died at Brookline, Mass., after a long illness. Mr. Fort served in the traffic departments of the New York Central and Union Pacific prior to 1920.

CONSTRUCTION

D.T.A. Lists 4th Quarter Construction Approvals

Authority to continue a $42,865,000 rehabilitation project on a New York City rail line during this year's fourth quarter has been granted by the Defense Transport Administration. This project was among 145 which D.T.A. approved for construction in the final three months of 1952.

Approval by D.T.A. authorizes the allotment of controlled materials. Many of the projects in this latest group already are in progress, while others are scheduled to get under way between now and January 1.

Value of the 145 projects approved for the fourth quarter is $151,128,110. Included in the approved group are projects in all fields of domestic transportation over which D.T.A. has authority—railroad, street and highway, inland waterways, warehousing and storage, and port utilization.

The New York City project is rehabilitation of the so-called Rockaway line which the city purchased from the Long Island. It involves reconstruction of a fire-damaged bridge across Jamaica Bay, new power facilities, signal systems, and a general overhaul of the entire line from White Pot to the Rockaways.

Other large railroad construction projects approved by D.T.A. are shown below. New projects are so designated:

Alabama Great Southern, centralized traffic control, Burstall, Ala., to Meridian, Miss., $740,000.

Atchison, Topeka & Santa Fe, (new) track relocation, Guthrie, Okla., $674,932; and (new) reduction of curves, Guthrie, Okla., $307,449.

Atlantic Coast Line, diesel-electric locomotive facilities, Lakeland, Fla., $287,650; centralized traffic control, Manchester, Ga., to Atlanta, $1,066,821; and (new) centralized traffic control, Fitzgerald, Ga., to Waycross, $769,000.

Baltimore & Ohio, grade separation, Cincinnati, Ohio, $610,282; and (new) centralized traffic control, Lima, Ohio, to Dayton, $903,600.

Chesapeake & Ohio, (new) centralized traffic control, Griffith, Ind., to Peru, $1,463,200; (new) Atomic Energy Commission, new tracks and facilities, Pike County, Ohio, $1,300,000; and centralized traffic control, Cheviot, Ohio to Dayton, $3,648,000.

Chicago, Burlington & Quincy, construction of rail line from Needles, Mo., to Forker, $16,400,000; and centralized traffic control, Pacific Junction, Iowa, to Lincoln, Nebr., $1,655,560.

Chicago, Rock Island & Pacific, diesel-electric locomotive facilities, Chicago, $1,433,690.

Clinchfield, (new) centralized traffic control, Spartansburg, N. C., to Erwin, Tenn., $1,250,000.

Indiana Harbor Belt, (new) freight car repair facilities, $606,200.

Long Island, (new) grade separation, Oyster Bay, N. Y., $1,420,000.

Louisville & Nashville, centralized traffic control, Corbin, Ky., to Erwin, $2,238,583.

Missouri-Kansas-Texas, (new) extension of Eureka yards, Houston, Tex., $415,250.

Missouri-Pacific, centralized traffic control, Raddle, Ill., to Gale, $675,450.

New York Central, diesel-electric locomotive facilities, at Gardenville, N. Y., $1,664,700; at Minoa, N. Y., $3,920,000; and at Collinwood, Ohio, $3,000,000.

Norfolk & Western, modernizing engine terminal, Portsmouth, Ohio, $1,154,000.

Pennsylvania, (new) diesel-electric locomotive facilities, Wilmington, Del., $402,971.

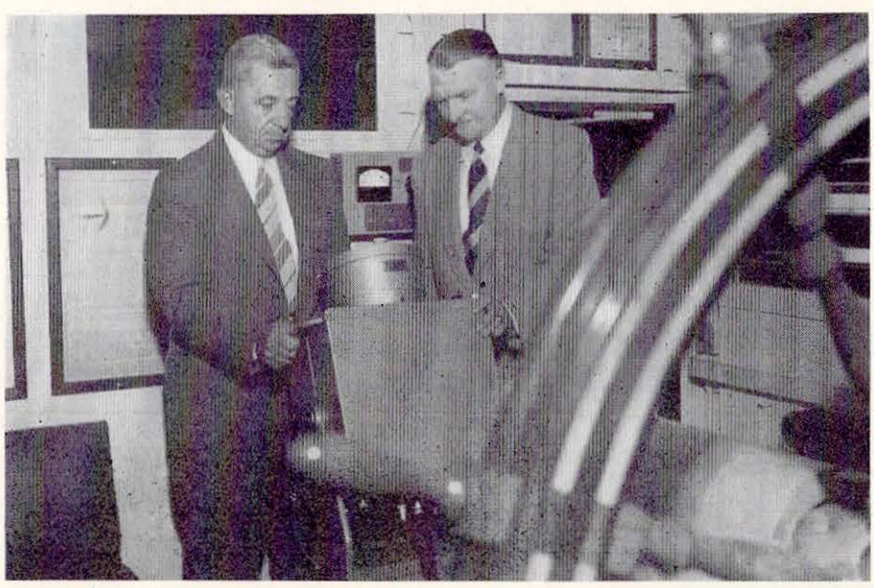
St. Louis-San Francisco, (new) freight yard facilities, Wichita, Kans., $295,000.

St. Louis Southwestern, centralized traffic control, Pine Bluff, Ark., to Brinkley, $815,272.

Southern Pacific, classification yard, Roseville, Cal., $4,715,070.

Texas & New Orleans, overpass, Houston, Tex., $560,000.

Union Pacific, centralized traffic control, Gibbon, Nebr., to Marysville, Kans., $2,453,000; and diesel-electric locomotive facilities, Salt Lake City, $5,358,000.



E. T. MOORE (left), president of the Jersey Central Lines, and Thomas P. Wynkoop, president of the Radiomarine Corporation of America, examine the Radiomarine radar installed recently aboard the JCL ferry "Elizabeth." The installation has a special switching feature which allows indicators in both pilot houses to be used alternately with complete controls in each house. Both indicators are connected to one transmitter-receiver.

Atchison, Topeka & Santa Fe.—Grading and culvert work in connection with the proposed "high line" between Turner, Kan., and Holliday—about 6½ miles—has been covered in a contract awarded to the George Bennett Construction Company of Kansas City, Kan. The Sharp & Fellows Contracting Co. of Los Angeles has a contract for grading and placing of culverts for a line change and yard extension at Belen, N.M.; while another contract, covering grading and culvert work for changes of line between Guthrie, Okla., and Edmond, has been awarded to C. E. Clark, of Kansas City, Mo.

Denver & Rio Grande Western.—Tunnel No. 41, on the line between Denver and Orestod, is being daylighted at a cost of $62,867. At Salt Lake City, land is being acquired and improved and present trackage extended, an auto unloading dock relocated and more than 31,000 sq. ft. of paving constructed for an industrial development area. These phases of the project are expected to cost $30,200.

Duluth, South Shore & Atlantic.—Contracts have been awarded for construction of a 14-mile spur track from the main line at Bergland, Mich., to White Pine, to serve the copper mine of the White Pine Copper Company (*Railway Age*, May 19, page 176). The contract for clearing, grading and culverts (about $210,000) was awarded to C. G. Bridges, Escanaba, Mich. Tracklaying and ballasting (about $110,000) will be done by the Jones Construction Company, Detroit. The new trackage is to be in operation by November 1 to permit movement of heavy construction material and equipment to the mine. The Reconstruction Finance Corporation granted a $57,185,000 loan to the copper company to place the mine in production The total cost of the new line is expected to be approximately $642,000.

Green Bay & Western.—Company forces are constructing a 152-ft., 11-span treated timber trestle to replace a 140-ft. trestle at a total cost of $20,200.

Northern Pacific.—A new car department service building will be built

(Continued on page 98)

RACOR No. 22 Heavy Duty Automatic Safety Switch Stands

(Patented)

The Chicago and North Western Railway's New Diesel Shop at Chicago.

Reduce emergency man hours and repair costs-- provide uninterrupted economical service.

Costly delays and expensive repairs are eliminated in busy turnouts often required when rigid stands are trailed. Investigation by economy minded maintenance officers will reveal substantial savings by using Automatic Switch Stands in yards where stands are frequently run through. Racor No. 22 Heavy Duty Automatic Safety ADJUSTABLE Switch Stands operate either manually or automatically and target and lamp rotate with switches however thrown and always indicate the true position of the switch points. Adjustment to fit slight variations in the throw of switches is provided by a heavy 1¾" diameter adjustable crank eye. During automatic operation the handle remains stationary. Write for descriptive literature.

RAMAPO'S GREATER EXPERIENCE AND FACILITIES HELP YOU SAVE.

America's most complete line of track specialties

- AUTOMATIC SWITCH STANDS
- VERTICAL SWITCH RODS
- SAMSON SWITCH POINTS
- SWITCH POINT LOCKS
- RAIL LUBRICATORS
- ADJUSTABLE RAIL BRACES
- DEPTH HARDENED CROSSINGS
- REVERSIBLE MANGANESE STEEL CROSSINGS
- MANGANESE STEEL GUARD RAILS

RACOR

AMERICAN Brake Shoe COMPANY

RAMAPO AJAX DIVISION

109 North Wabash Avenue, Chicago 2, Ill.

BURLINGTON ORDERS TEN MORE GALLERY CARS

Experience with original thirty shows they improve service, reduce cost, attract traffic

Two years ago the first 148-passenger, air-conditioned gallery cars were delivered to the Burlington. At that time we said: "The Burlington expects their operating economies and ability to attract traffic to have an immediate effect on commuter revenues."

Events have confirmed this prediction.

The Burlington's Annual Report for 1951 states: "Commutation passengers

carried in 1951 increased 438,136, or 7.76%, compared with 1950, and revenue from commutation fares increased 9.94% compared with 1950."

With fewer cars required to handle traffic, operating and maintenance costs are lower, and there is less need for storage space. Their high seating capacity means less dead weight and a smaller initial investment per passenger seat.

And their stainless steel construction insures their almost unlimited capacity for usefulness over a span of time that has never been measured. No Budd railway passenger car has ever worn out.

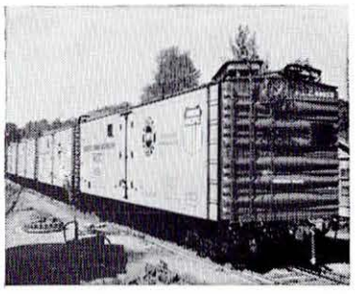
The Budd Company, Philadelphia 32.

Budd

PIONEERS IN BETTER TRANSPORTATION

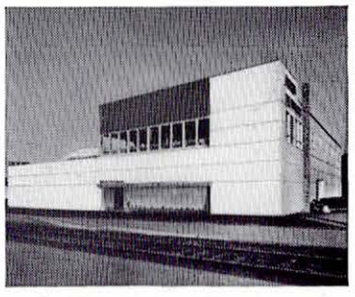
Choose Plywood For All These Railroad Jobs

CAR CONSTRUCTION



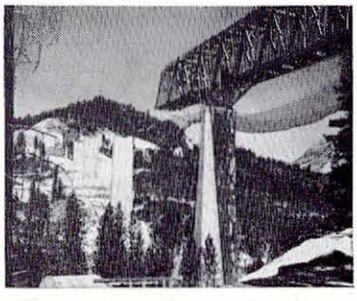
Siding and lining reefers; bunkers and bulkheads in reefers. Siding and lining box cars, work cars and other rolling stock. Underlayment for floor coverings, luggage racks, interior details in passenger cars.

BUILDING and MAINTENANCE



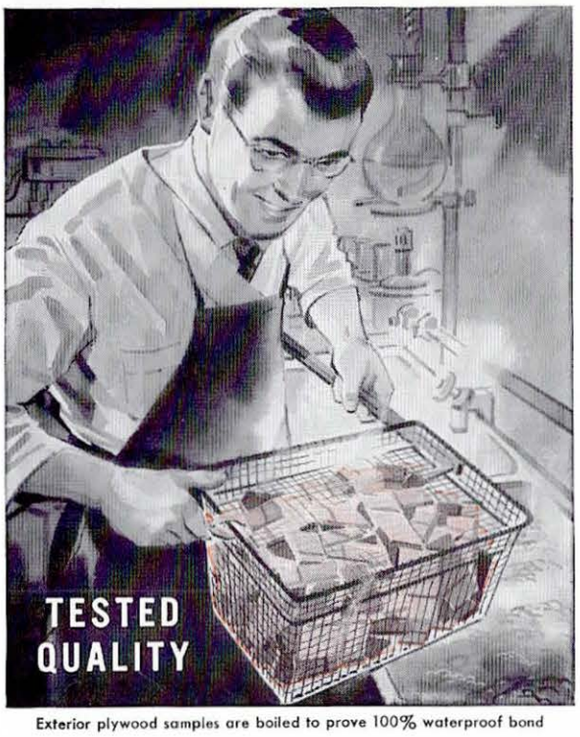
Siding, interior paneling, movable partitions and cabinet work . . . subflooring, wall and roof sheathing. Station booths and counters. Signs and signal boards. Parts bins. Pallets. Track shims. Portable buildings.

CONCRETE FORM WORK



For stations, shops and maintenance buildings . . . bridges, aqueducts and other concrete jobs . . . re-usable plywood concrete form panels offer these advantages: smooth, fin-free concrete; time and labor savings through simplified form construction; low cost-per-use.

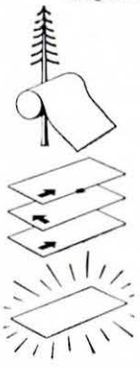
Only plywood gives you all 6



Exterior plywood samples are boiled to prove 100% waterproof bond

GRADE-TRADEMARKS on industry-inspected Douglas fir plywood do far more than identify type and grade—they are positive assurance of quality products, made, inspected and tested in strict accord with rigid U. S. Commercial Standards. Every day, plywood samples are random-selected from factory production lines. Some are given accelerated performance punishment in industry laboratories. Others get extended field exposure tests. This industry quality-maintenance program is but one good reason why Douglas fir plywood can be *depended on* for hundreds of building, remodeling and manufacturing jobs. Plywood will meet your tests, too!

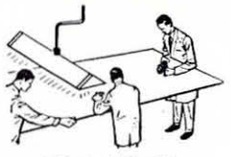
U. S. Commercial Standard CS45-48 details performance requirements, gives types, grades, sizes. For free copy, write Douglas Fir Plywood Association, Tacoma, Washington.



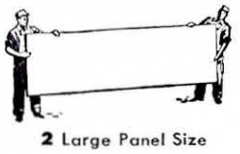
Douglas fir plywood is real wood, made by "unwinding" giant logs

into thin wood sheets which are inseparably cross-laminated

to form large, light panels having beauty and great strength



1 Tested Quality

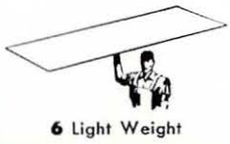


2 Large Panel Size

3 Cross Laminated Strength

4 Workability

5 Attractive Appearance

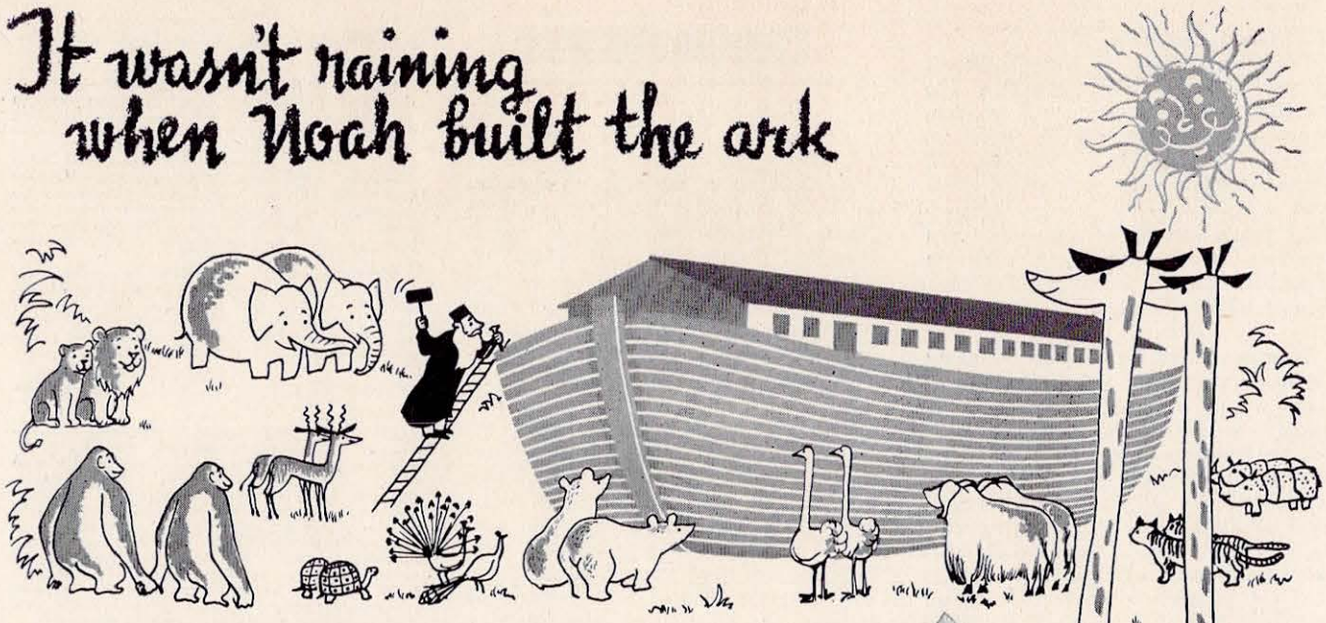


6 Light Weight

Douglas Fir Plywood

AMERICA'S BUSIEST BUILDING AND INDUSTRIAL MATERIAL

It wasn't raining when Noah built the ark



. . . but when the flood came, preparedness saved the day!

Unprotected grade crossings, too, present a hazard that can be eliminated by preparedness—the *right kind of protection.*

Attacking the grade crossing problem realistically, a hundred railroads, since 1936, have adopted Model 10 Automatic Signals as a means of accident prevention.

The phenomenal lifesaving performance of these signals is best shown by their record: Thousands of Model 10's are in service at busy crossings, yet *not a single accident has ever occurred as a result of operation failure.*

Model 10

AUTOMATIC GRADE CROSSING SIGNALS
PRODUCT OF
WESTERN RAILROAD SUPPLY COMPANY
CHICAGO 8, ILLINOIS

LEADING MANUFACTURER OF GRADE CROSSING SAFETY DEVICES—MAKER OF RAILWAY SIGNALING ACCESSORIES

Pat. in the U.S.A. and in Canada.

A.R.E.A. CONVENTIONEERS!

Meet us in Chicago, Illinois
March 10th through March 13th
and see our display at the Coliseum

BOOTHS 118 - 119 - 120

(Continued from page 92)
by company forces at Laurel, Mont., at an estimated cost of $90,000. The building will be of concrete block construction, 65 ft. by 150 ft. Windows will be of glass block. The building will house the office of the general car foreman, a lunch and locker room, a time-clock room, and shower and washroom facilities. Work will begin early in September and is scheduled for completion within 90 days.

Western Pacific. — The following projects—along with new rail and ballasting work at several locations—bring to a total of more than $7 million the projects currently in progress: Installation of 574 ft. of concrete lining in Tunnel No. 37—$177,000; replacement of 1,038 ft. of timber lining with concrete in Tunnel No. 6—$500,000; installation of traffic control system (C.T.C.) between Wendover, Utah, and Salt Lake City, 111 miles—$1,840,000; extension of sidings between the same points to a capacity of 125 cars—$256,000; replacement of 14 pile trestles at different locations with ballasted-deck trestles—$122,000; installation of remote-controlled switch heaters at 18 locations—$41,000; installation of additional carrier telephone and telegraph apparatus between Oakland, Cal., and Salt Lake City—$103,000; replacement of fenders and dolphins at drawbridge over San Joaquin river—$36,000; construction of 300-ft. set-out spurs at 12 locations — $45,000; rearrangement of yard trackage at Elko, Nev., and Keddie, Cal.—$300,000; construction of new storehouse and attendant facilities at Sacramento—$305,000; installation of floodlights at Stockton and Oroville yards—$66,000; conversion of steam facilities at Portola and Elko for diesel operator—$979,000.

ABANDONMENTS

Chicago & North Western.—The I.C.C. has affirmed its 1951 decision denying this road authority to abandon its 37.7-mile branch line between Belle Plaine, Iowa, and What Cheer. (*Railway Age*, October 22, 1951, page 74). This latest decision was 7-to-4. The majority said the line "satisfies an existing public need which could not be presently provided in an adequate manner by highway transportation."

Norfolk Southern. — The I.C.C. has upheld its previous decision authorizing this road to abandon a 23.2-mile segment between Star, N. C., and Asheboro. The earlier order was suspended while the commission considered petitions for reconsideration. Such petitions now have been denied, and authority to abandon the segment becomes effective December 31, 1952. Meanwhile, the commission agreed to reconsider an order authorizing the NS to abandon a 6.2-mile line between Plainview, N. C., and Ellerbe. This order was suspended also when protestants asked reconsideration, and the case was reopened in line with their requests (*Railway Age*, May 12, page 79, and June 23, page 102).

Texas & Pacific.—The I.C.C. has agreed to hold further hearings in connection with this road's proposed abandonment of a 7-mile branch between McWilliams, La., and Indian Village. The commission will admit evidence "as to facts which have arisen since June 4, 1951." As noted in *Railway Age* January 7, page 74, the I.C.C. previously denied the road's application for authority to abandon the line.

Application has been filed with the I.C.C. by:

DENVER & RIO GRANDE WESTERN.—To abandon its narrow-gage line between Poncha Junction, Colo., and Sapinero, approximately 91.4 miles. The road also wants to abandon two narrow-gage branch lines, from Gunnison, Colo., to Crested Butte, 28.2 miles, and from Gunnison to Castleton, 15.8 miles. An additional 18.1 miles of spur and side tracks would be abandoned in connection with the overall proposal. The road said this entire trackage has been operated at "substantial deficits for several years."

NATIONAL COAL RAILWAY.—To abandon its entire line, approximately 8.7 miles, from Darrah, Utah, to Union. The Utah Railway Company, which operates the line, seeks authority to abandon the operation. The line served coal mines which have gone out of business.

Division 4 of the I.C.C. has **authorized:**

ATLANTIC COAST LINE.—To abandon a 7-mile segment of main line between Donora, S. C., and Meyers Mill. This line is within the area being acquired by the Atomic Energy Commission for its Savannah River plant. A substitute line, approximately 6.4 miles, will be constructed by the government and turned over to the A.C.L.

BOSTON & MAINE.—To abandon a 16.7-mile segment of main line, extending from a point near Kittery, Me., to North Berwick. This segment is at the north end of the B&M's eastern route from Boston, Mass., to North Berwick. Traffic now will be routed via the so-called western route.

CHICAGO & NORTH WESTERN.—To abandon its 28.1-mile rail line between Plymouth, Wis., and Fond du Lac. Abandonment of a portion of this line, between Peebles and Fond du Lac, approximately 5 miles, is conditioned upon the road's agreeing to continue switching service for industries and the Taycheedah Prison at Peebles. The road has indicated it will provide such service. The 28.1-mile segment has been used principally to handle bridge traffic, which now will be handled via alternate routes.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—To abandon an 8.3-mile segment between Ashdale, Ill., and Fay. The line has been used for operational convenience only and is no longer required.

COLORADO & SOUTHEASTERN.—To abandon its entire line, approximately 4.9 miles, extending from Delacua, Colo., to a connection with the Colorado & Southern at Ludlow. Coal mines served by the line have been closed permanently.

DES MOINES & CENTRAL IOWA.—To abandon its line between Granger, Iowa, and Perry, 16.7 miles. A 0.7-mile portion of the line at Perry will be sold to the Minneapolis & St. Louis. An additional 8.4 miles at Granger will be retained temporarily by the road as a spur track to a ballast pit.

PETALUMA & SANTA ROSA.—To abandon its so-called Two Rock branch line, from Liberty, Cal., to Two Rock, 5.4 miles. Division 4 found "no further public need" for the line.

ROCK ISLAND SOUTHERN-CHICAGO, ROCK

ANNUAL REPORTS

Railroad		Operating Revenues	Operating Expenses	Fixed Charges	Net Income	Current Assets*	Current Liabilities*	Long Term Debt*
Chicago Great Western	1951	$ 34,136,932	$ 24,657,381	$ 869,356	$ 2,115,214	$ 9,764,358	$ 7,534,133	$ 32,236,956
	1950	33,150,846	23,340,689	805,861	2,885,531	11,053,365	8,150,168	24,651,576
Clinchfield	1951	23,630,005	13,109,300	2,337,836	7,564,552	7,045,184	14,269,126	11,939,724
	1950	20,445,862	11,654,855	2,316,946	5,988,120	6,843,035	12,342,729	11,146,301
Colorado & Southern	1951	16,691,526	11,308,539	424,914	1,945,984	5,807,766	5,346,695	35,215,912
	1950	14,889,830	9,850,346	637,406	1,607,966	6,099,620	4,977,359	37,238,825
Florida East Coast	1951	29,831,967	24,072,081	4,702,258	2,023,730	23,495,169	2,344,654	60,235,247
	1950	26,890,357	22,364,809	4,773,854	3,029,950	20,193,224	970,111	60,282,242
Fort Worth & Denver	1951	21,974,728	15,484,873	1,296,977	1,332,633	6,207,617	4,950,385	8,673,987
	1950	20,510,360	13,198,185	1,210,148	2,050,855	7,901,942	5,805,921	7,377,107
International-Great Northern	1951	38,252,366	31,675,794	2,941,164	572,741	14,814,979	9,331,953	58,181,902
	1950	34,408,437	27,223,524	2,953,364	1,305,335	15,877,418	9,667,124	58,208,014
Missouri Pacific	1951	239,345,626	193,181,841	17,502,808	11,045,567	107,763,285	37,921,396	381,359,115
	1950	220,366,395	161,330,201	18,475,762	17,393,723	101,287,789	41,018,393	368,196,557
New Orleans, Texas & Mexico	1951	43,775,446	32,613,647	2,836,572	2,040,607	14,031,350	10,608,690	67,799,443
	1950	41,677,803	29,357,913	2,844,945	2,649,207	15,681,923	10,409,061	67,229,026
Norfolk & Western	1951	206,595,433	138,258,332	1,724,555	30,751,104	96,839,032	61,041,229	41,882,132
	1950	167,996,440	116,410,282	1,824,329	29,308,479	82,988,066	41,133,985	43,895,132
Tennessee Central	1951	5,233,596	4,070,146	271,703	160,811	1,595,498	1,399,817	7,072,976
	1950	4,778,538	3,612,790	308,429	183,489	1,961,310	1,892,600	7,360,568
Toledo, Peoria & Western	1951	6,681,280	4,156,433	72,767	749,651	2,535,461	1,786,880	1,894,447
	1950	5,903,769	3,209,470	95,411	1,062,991	2,180,360	1,487,046	1,958,554
Wichita Valley	1951	1,296,361	804,278	201,548	71,765	643,278	391,890	2,860,802
	1950	1,810,623	944,888	212,036	208,052	913,474	539,113	3,048,775

*On December 31

Announcing the appointment of...

SPRING PACKING CORPORATION

as exclusive railroad distributors for

THE PRESSTITE ENGINEERING COMPANY

Manufacturers of SEALING COMPOUNDS

PRESSTITE Sealing Compounds—long-time leaders in the field—for the first time are now available through a nation-wide organization devoted to serving the railroads. Spring Packing Corporation Representatives will be glad to discuss your sealing problems . . . to help you select from the many excellent **PRESSTITE** products . . . and to work with your personnel in meeting special requirements. When sealers are needed, you can look to Spring Packing for sound advice and prompt deliveries.

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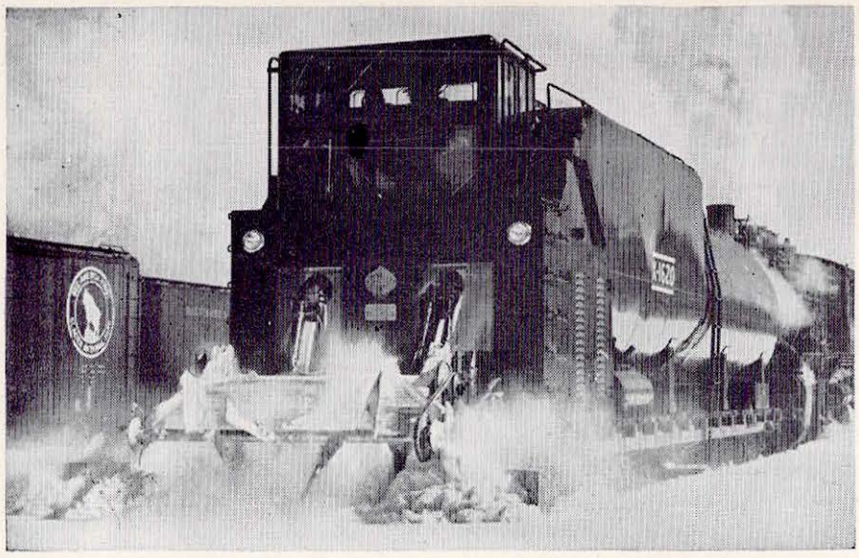

BROS *Sno-Meltr* Casts Snow or Melts it Instantly

Here's the dual-purpose unit that revolutionizes railroad yard snow handling! Patented feeder rakes of the Bros Rotary slash and shatter even the hardest packed snow. Twin rotors whip the disintegrated snow back into the melting chamber. From a myriad of spray outlets, hot water blasts each snow particle . . . fastest melting you've ever seen! Rear section of tank unit collects the water, can take a load of 19,000 gallons before quick dumping. Entire unit mounts on 70-ton flat car.

Bros revolving casting chutes can be aimed together or separately in any direction, can cast snow 75 to 100 feet away. Special gathering wings increase plowing width from 9′ to 14′. They lift individually to clear platforms, etc. Scarifier cleans down to 3" below rail level. All controls are hydraulic. Write for full information.

Bros Sno-Meltr dual-purpose units have been proved by use on the Great Northern and the Canadian Pacific railroads.

WM. BROS BOILER & MFG. CO.
RAILROAD SALES DEPARTMENT • MINNEAPOLIS 14, MINNESOTA

ISLAND & PACIFIC.—To abandon the entire line of the RIS, approximately 34.6 miles, as well as operations over an additional 22 miles of CRI&P trackage. The RIS line consists of 15.1 miles from Southern Junction, Ill., through Gilchrist to Aledo; 18.2 miles from Gilchrist to Laws Crossing, and 1.3 miles from a point near Gilchrist to Shale City. Meanwhile, Division 4 also authorized abandonment by the CRI&P of 13.3 miles of its trackage, extending from a point west of Milan, Ill., to Preemption. The latter segment is a part of the CRI&P trackage over which the RIS held operating rights.

SANFORD & EASTERN.—To abandon a 15.6-mile segment of its line, from Springvale, Me., to Rochester, N. H.

SEABOARD AIR LINE.—To abandon segments totaling 64.9 miles in the area of Fort Myers, Fla. Included is the line between Hull Junction and Fort Myers, 33 miles, and two branch lines, from Fort Myers to San Carlos (14.7 miles) and Fort Myers to Alva (17.2 miles). Division 4 said operation of these lines for the past three years "has resulted in substantial system deficits." The division allowed 40 days for any prospective purchaser to acquire all or portions of the lines at a price "not less than the net salvage value." This net salvage value was estimated at $334,381.

OVERSEAS

$25 Million Loan Goes To Colombian Railroads

The International Bank for Reconstruction and Development has made a $25,000,000 loan to Colombia to help that country improve the Colombian National Railroads.

Twenty million dollars of the loan will be used to help construct a 235-mile rail line in the Magdalena River valley. The remainder of the loan will help build and equip railroad repair shops in Bogota.

An announcement by the bank said the $25,000,000 loan will pay for imported equipment and services. The imported goods to be financed are mainly structural steel, rails, work trains and construction equipment for the new road; and machinery and tools for the new shops.

Total cost of these Colombian projects is estimated at $49,000,000. The portion not covered by the loan will be paid by the government of Colombia. Work will be carried out by engineering and construction firms under contract with the Ministry of Public Works, and completion of the projects is scheduled for late 1956.

"The Magdalena valley line will connect the country's eastern and western rail networks," the bank announcement said. "It will provide all-rail transport between the port of Buenaventura on the Pacific coast and the areas of Bogota and Medellin, as well as a fast and reliable river-rail route between central Colombia and the Caribbean ports. At present, traffic through the valley is carried on the Magdalena river, but on some sections of the river, navigation is subject to frequent interruptions in dry seasons. The railroad will supplement river transport on those sections.

"The new repair shops will provide facilities for proper reconditioning and maintenance of rolling stock which now lies idle for long periods awaiting repair."

The program for railway improvement includes physical rehabilitation of existing facilities and a thorough reorganization of the National Railroads, the announcement added. Present operating procedures will be overhauled to get more intensive use of rolling stock, to increase serviceability of equipment and to improve the effectiveness of labor.

The bank's railway loan is for 25 years and bears interest at 4¾ per cent, including the 1 per cent commission which is allocated to a special reserve. Amortization payments on the loan will begin August 15, 1957.

Pakistan.—Bids have been invited by this country's government for supply and delivery of 31,297 long tons of manganese steel rails and appurtenances, according to Foreign Commerce Weekly. Tender documents, schedules of requirements, specifications and standard conditions of contract are available at $30 a set from the Embassy of Pakistan, Commercial Division, 2315 Massachusetts Avenue, N. W., Washington, D. C.

I.C.C. Issues 1951 Freight Statistics

The Interstate Commerce Commission has issued its "Freight Commodity Statistics, Class I Steam Railways in the United States" for 1951. The 280-page volume was compiled by the commission's Bureau of Transport Economics and Statistics. It is No. 28 in the series, and is designated as Statement No. 52100.

District Court Enjoins I.C.C. Montana Rate Order

A United States District Court in Montana has granted a permanent injunction against a recent Interstate Commerce Commission order raising Montana intrastate rates. As noted in *Railway Age* of August 18, page 15, the court previously granted a temporary injunction until the case could be heard.

In granting the permanent injunction, the court held that the commis-

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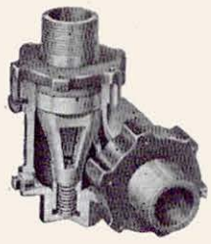
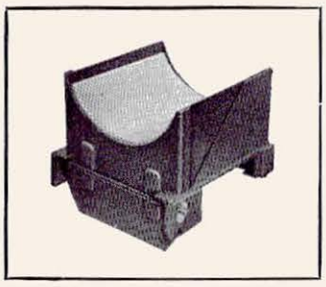
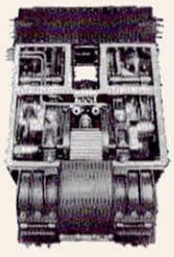
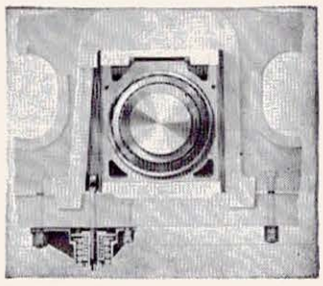
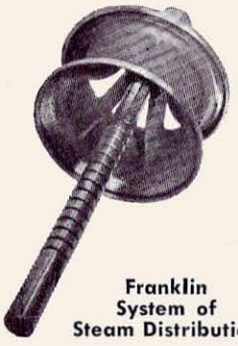
In order to obtain full efficiency from your Franklin devices, specify genuine Franklin parts in replacement. Franklin devices will always perform best when equipped with genuine Franklin parts made to interchangeable tolerances and of the correct materials.

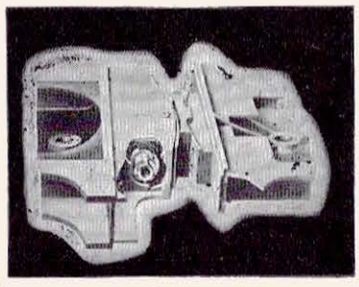

Sleeve Joints

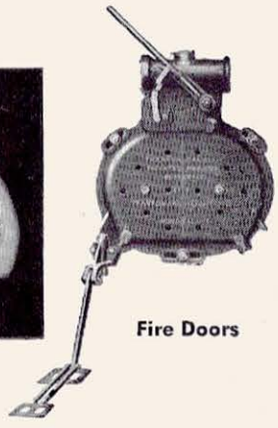

Driving Box Lubricators


The Locomotive Booster


Automatic Compensators & Snubbers


Franklin System of Steam Distribution


Radial Buffers


Fire Doors

Power Reverse Gears

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sion's order was not sustained by any finding as to intrastate revenue required for efficient operation of Montana railroads. The court said commission findings as to preference and prejudice between persons and localities "will not sustain the general order now before us."

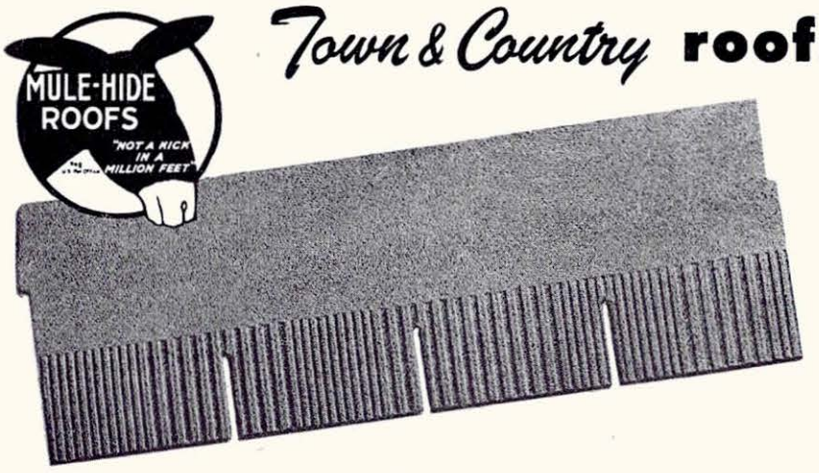
WM to Reenact Gettysburg Address

The Western Maryland will present on October 18 a dramatic reenactment of President Lincoln's visit to Gettysburg, Pa., and the delivery of his historic address there. WM Chairman Eugene S. Williams has announced that "Mr. Lincoln" and his official party will arrive at the road's Gettysburg station on a special train made up of a locomotive and cars in existence in 1863 and similar to those in the actual Lincoln train.

From the station, built in 1858, the walls of which still have bullet holes made during the battle of Gettysburg, the costumed group will take the route traveled by the Civil War president to the battleground where the address was delivered. Local citizens, dressed in the styles of the 1860's, will greet "Mr. Lincoln" at the station and will participate in the procession to the speaker's platform, to be constructed less than 100 yards from where Lincoln spoke.

In explanation of the pageant, Mr. Williams said the WM is this year celebrating its 100th anniversary and wants to use the occasion to render an outstanding public service. "It was the Western Maryland which transported Mr. Lincoln and his party to and from Gettysburg on the momentous occasion of his immortal address," he added. "Linked therefore, as it is, with this epochal event of American history, it is considered appropriate that the WM initiate and sponsor the pageant as a means of re-presenting the inspiring appeal by one of the nation's truly great presidents to the people for a rededication to the principles of liberty and justice upon which the fabric of our government is woven."

Many Railroads today specify MULE-HIDE *Town & Country* roofs



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Wheel Report Correction

In a summary of the discussion of the report of the Mechanical Division Committee on Wheels at the San Francisco annual meeting, which appeared on page 81 of the July 14 *Railway Age*, one railroad was said to have reported two failures of F-36 wheels and that a third was found to be cracked. These failures were not F-36 wheels, but A-40 wheels, and they were mentioned to call attention to the fact that the A-40 wheels, particularly in passenger service, are susceptible to the same types of failures as have previously been reported on F-36 wheels.

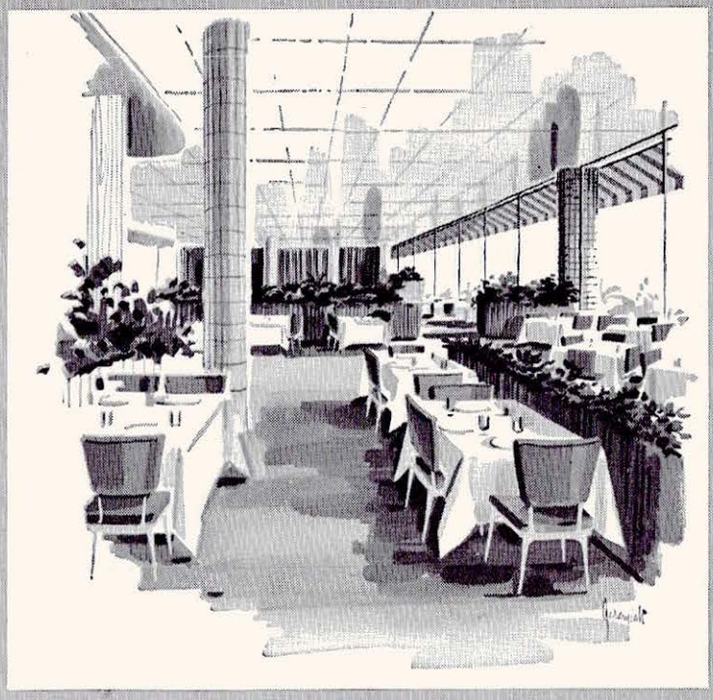
Fueling Alarm Signal

In an article entitled "Fueling Alarm Signal," which appeared on page 37 of the June 23 *Railway Age*, the statement was made that "When the whistle stops, the attendant knows that the tank is full." This should have read: "The whistle sounds continuously until the liquid in the tank has reached a predetermined level. When the whistle stops, the attendant simply stops filling." The same article also stated: "The whistle in the alarm operates at a pressure of 0.5 oz. per sq. in." This should have read: "The whistle in the alarm operates at a pressure of 4.0 oz. per sq. in."

Railroad Work in Scrap Drive Wins High Praise

Railroads are among those industries which have "responded magnificently" to scrap drives of the National Production Authority, William M. Martin, deputy director of N.P.A.'s Salvage Division, said in an August 29 speech in Pittsburgh, Pa.

Speaking at the Scrap Seminar of Junior Scrap Executives, Mr. Martin said the railroads have moved "astonishingly substantial tonnages of dormant scrap" during the current program. Thousands of old steam engines "coughed their last mile and have been scrapped," he said. Mr. Martin praised the manner in which the carriers, the



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Simtex

SIMTEX COVERS MORE TABLES THAN ANY OTHER MAKER IN AMERICA

Association of American Railroads and the American Short Line Railroad Association worked together "as a single unit" to collect scrap.

"The largest single source of desirable scrap is the railroads," Mr. Martin continued. "From a recent report we learned that the railroads last year provided nearly 12 per cent of all purchased scrap. Railroads always respond quickly in times of emergency."

Section 20c Fees Won't Be As High as First Proposed

Fees for recording documents under the Interstate Commerce Act's new section 20c will not be as high as those originally proposed by the commission. The principal fee will be $50 for each document filed, instead of the originally proposed $50 for each million dollars, or part thereof, of indebtedness evidenced by the document.

Section 20c was enacted during the closing days of Congress' recent session. It sets up arrangements for filing with the commission, for recording purposes, of any mortgage, lease, equipment trust agreement, conditional sale agreement, or other instrument evidencing the mortgage lease, conditional sale, or bailment of railroad rolling stock. The $50-per-million fee was prescribed by the commission in an order, dated July 28, whch also prescribed the recording rules and regulations. (*Railway Age*, August 18, page 60.)

The lower fee was prescribed in an August 25 order which amended the original order accordingly. The amendment did not change the $10-per-document fee for such supplemental filings as assignments of rights and amendments to the basic instruments; but it did have new provisions removing the $10 fee with respect to assignments which are executed prior to the filing of the basic instrument and which are submitted with that instrument for recordation as one document. The original order's provision stipulating that a lease and agreement under the "Philadelphia Plan" will be counted as one document remains in effect.

W.S. Morris Takes Part in Travelers Aid Campaign

William S. Morris, vice-president of the American Locomotive Company, has accepted the chairmanship of the railway supplies division in the 1952 fund raising drive of the Travelers Aid Society of New York. Mr. Morris has joined 117 other business leaders in New York in helping to raise the society's 1952 goal of $406,000.

Volume of Truck Traffic Off 3.4% in Second Quarter

Freight tonnage handled by Class I motor carriers in the second quarter of this year was 3.4 per cent below the volume of the comparable 1951 period, according to figures compiled by American Trucking Associations.

The figures, labeled "preliminary," were based on returns from 1,301 trucking companies which carried 41.1 million tons of intercity freight in the second quarter, compared with 42.6 million tons in the second quarter of last year. The A.T.A. index, based on 1941 as 100, was 229 for this year's second quarter. For the second quarter of 1951, it was 237.

Depreciation Rates For B&A and FEC

Equipment depreciation rates for the Bangor & Aroostook and the Florida East Coast were among those prescribed by the Interstate Commerce Commission in a recent series of sub-orders in the general proceeding—"Depreciation Rates for Equipment of Steam Railroad Companies."

Rates prescribed for the B&A were: Steam locomotives, 37.5 per cent; "other" locomotives, 4.8 per cent; freight-train cars, 2.52 per cent; passenger-train cars, 2.86 per cent; work equipment, 2.78 per cent, and miscellaneous equipment, 10 per cent.

Rates prescribed for the FEC were: "Other" locomotives, 4.77 per cent; freight-train cars, 3.15 per cent; passenger-train cars, 2.52 per cent; work equipment, 3.86 per cent, and miscellaneous equipment, 16.74 per cent. No rate was prescribed for FEC steam locomotives.

Amortization Certificates

Certificates of necessity for accelerated tax amortization of facilities were granted to 14 railroads during the period from August 7 through August 20, the Defense Production Administration has announced.

Roads receiving the fast write-off certificates are listed below, together with the amounts approved by D.P.A. and the percentage of those amounts which can be written off in five years.

Alabama Great Southern, $24,757, 40 per cent.

Atlantic Coast Line, $75,737, 55 per cent.

Baltimore & Ohio, $279,235, 40 per cent; and $279,750, 50 per cent.

Chicago, Milwaukee, St. Paul & Pacific, $309,634, 40 per cent.

Chicago & North Western, $4,091,759, 55 per cent; and $7,014, 70 per cent.

Kansas City Southern, $18,231, 40 per cent.

Los Angeles & Salt Lake, $475,606, 40 per cent.

Louisville & Nashville, $182,443, 40 per cent; and $75,737, 55 per cent.

Macon, Dublin & Savannah, $23,626, 70 per cent.

New York, Chicago & St. Louis, $346,561, 40 per cent.

Oregon Short Line, $149,761, 40 per cent.

Pennsylvania, $682,505, 40 per cent.

Southern, $535,323, 40 per cent; and $40,175, 50 per cent.

St. Louis Southwestern, $1,904,200, 55 per cent.

Your worn fuel injection equipment made "good as new"

Our expert rebuilding service gives your equipment thorough inspection, salvage of usable parts, replacement of those beyond repair, testing after reassembly, and a permanent record of each piece of equipment, all at moderate cost.

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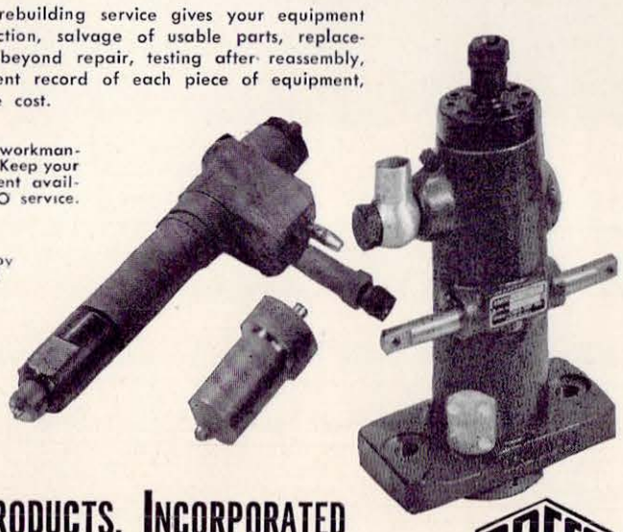

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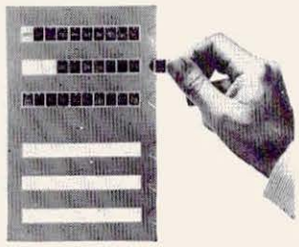

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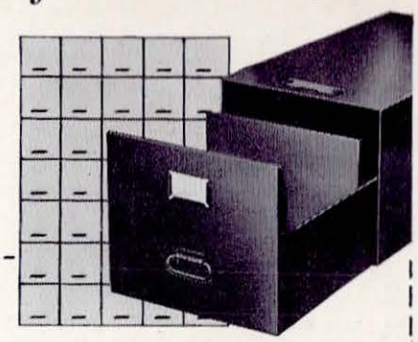

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Current Publications

PAMPHLETS

Blue Diamond Coal Company, 24 pages, illustrations. Blue Diamond Coal Sales Company, 805 Dixie Terminal bldg., Cincinnati 2, Ohio.

After many years of experience in building railroads and ship terminals, and in developing coal and iron properties and other southern natural resources, Alexander Bonnyman turned to coal mining development in Kentucky, Tennessee and Virginia. His first venture, the Blue Diamond Mine in Perry county, Ky., was the beginning of the Blue Diamond Coal Company. That was about 40 years ago. Mr. Bonnyman's latest undertaking, the Leatherwood Mine, now in operation seven years, with its newly completed preparation plant, embodies the most modern equipment available at this time. In addition, 11 other mines developed or acquired by Mr. Bonnyman go to make up the present capacity of more than seven million tons to be produced annually by the company. The mines and employee relations are described in this booklet; there is also a biography of Mr. Bonnyman.

A Review of Railway Operations in 1951, by Julius H. Parmelee. 51 pages. Association of American Railroads, Bureau of Railway Economics, Transportation bldg., Washington 6, D. C. Free.

Reviews traffic trends, financial results, employment and wages, prices, rates and fares, capital expenditures and purchases, equipment, operating efficiency, economy, and safety, and general railroad developments which occurred during the year 1951. The pamphlet is a reprint of Dr. Parmelee's article in the January 14, 1952, *Railway Age*, with revisions to April 15.

U. S. Transportation: Time for a Fresh Approach? Platform, March 1952. Newsweek, Club and Educational Bureau, 152 W. 42nd. street, New York 36. 25 cents.

"Platform" is prepared as a public service by Newsweek's Club and Educational Bureaus and appears monthly, September through May. It offers pro and con discussion of today's most controversial issues. This issue is devoted to the transportation problem. It traces the rapid development of motor carriers, airlines, and other forms of transportation, and outlines the competitive and regulatory problems that have arisen between them and the railroads as a result. The argument of all forms of transportation is presented so the reader may judge the problem from all angles.

PERIODICAL ARTICLE

What's Right with the Railroads, by David P. Morgan. Pp. 14-19. Trains and Travel Magazine, September 1952. Published by the Kalmbach Publishing Company, 1027 N. 7th st., Milwaukee 3. Single copies (at newsstands), 50 cents.

In Mr. Morgan's own words: "American railroads should be bankrupt in 1952, K.O.'d by post-war inflation. The case for railroad management is why the industry refuses to stay down for the count."

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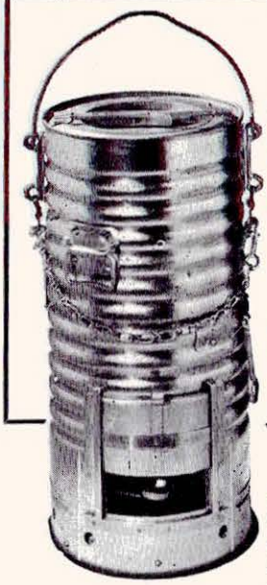

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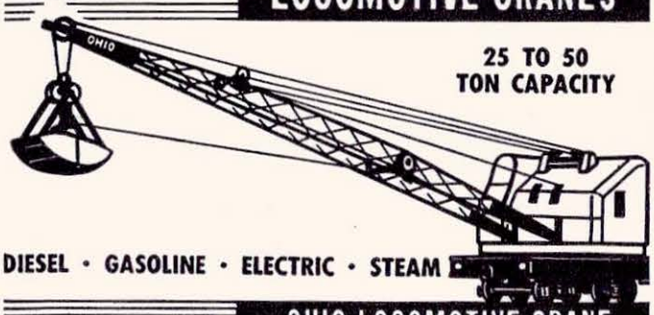

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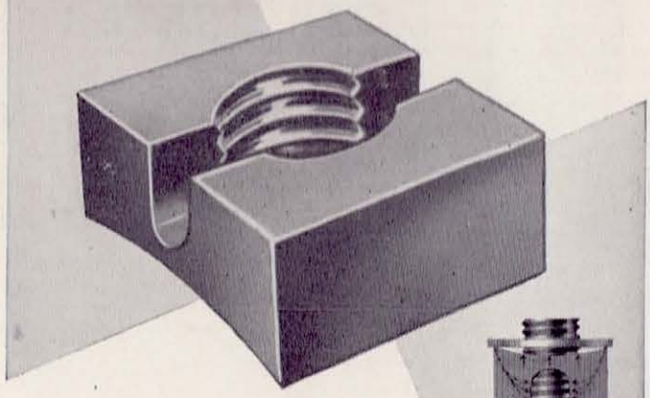

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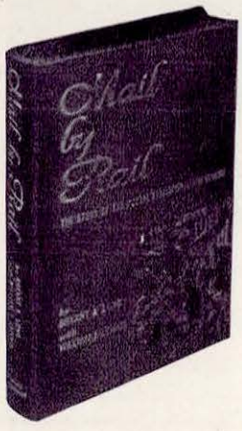

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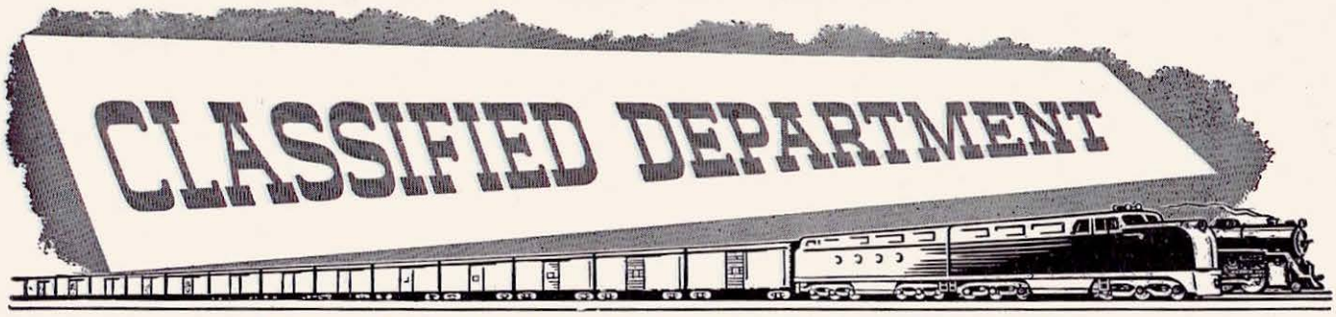

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2. approximately 2,800
3. between 30 and 35 million
4. 2 million
5. 441

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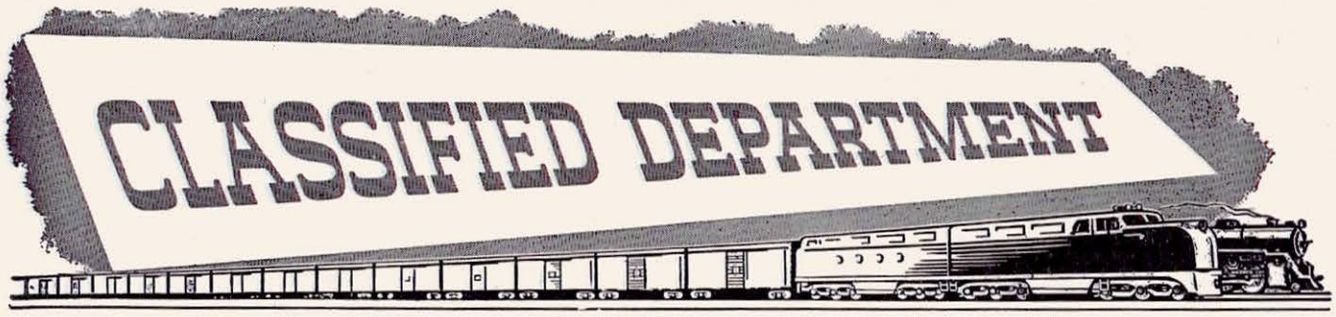

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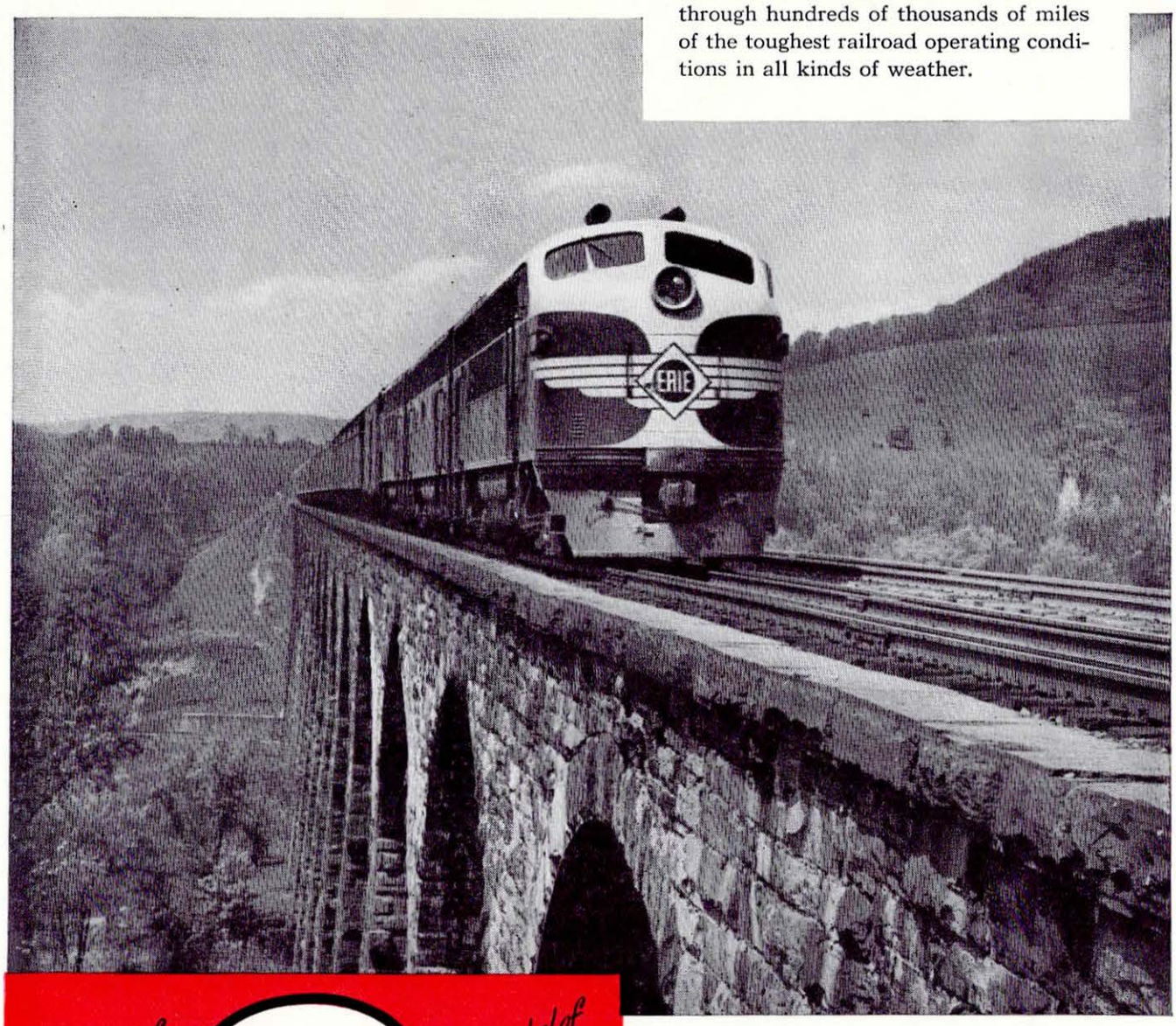

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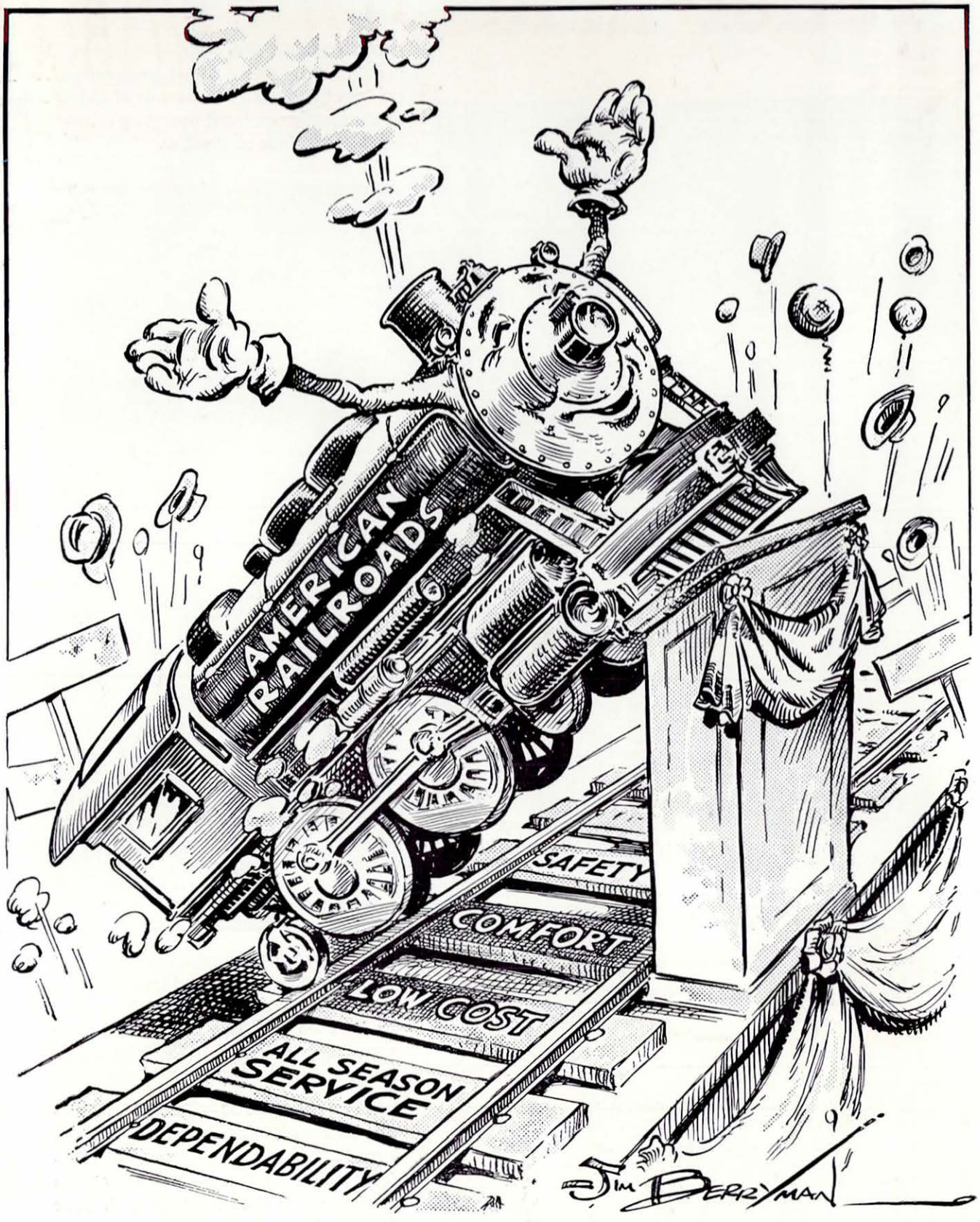

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